

EXHIBIT I

OVERSIGHT BOARD REPORT ON PENSIONS

PROMESA Section 211 Report on the Puerto Rico Retirement Systems

September 2019

Disclaimer

The Financial Oversight and Management Board for Puerto Rico (the "Oversight Board") engaged Ernst & Young Puerto Rico ("EY") to perform an analysis of certain Puerto Rico pensions (the "Report") as described by Section 211 of Puerto Rico Oversight, Management, and Economic Stability Act ("PROMESA").

The nature and scope of EY's services were determined by the Oversight Board and are reflected in the agreement between EY and the Oversight Board dated February 15, 2017, and the ninth amendment dated December 11, 2018 (the "Agreements"). EY's procedures were limited to those requested by the Oversight Board and which are described in the Agreements. EY's work was performed only for the use and benefit of the Oversight Board and should not be used or relied on by anyone else. Other persons who read this Report who are not a party to the Agreements do so at their own risk and are not entitled to rely on it for any purpose. EY does not assume any duty, obligation or responsibility whatsoever to any other parties that may obtain access to the Report.

EY's services were advisory in nature. While EY's work in connection with this Report was performed under the standards of the American Institute of Certified Public Accountants (the "AICPA"), EY did not render an assurance report or opinion under the Agreements, nor did EY's services constitute an audit, review, examination, forecast, projection or any other form of attestation as those terms are defined by the AICPA. None of the services EY provided constituted legal opinions or advice. This Report is not being issued in connection with any issuance of debt or other financing transaction.

The Oversight Board has the knowledge, experience and ability to form its own conclusions. Any assumptions, forecasts, projections, recommendations, conclusions or opinions contained in this Report are solely those of the Oversight Board.

In assisting in the preparation of this Report, EY relied on information and underlying data provided by the Oversight Board, its advisors, the Government of Puerto Rico (the "Government"), or publicly-available resources, and such information was presumed to be current, accurate and complete. See Appendix A for a list of such sources. EY has not conducted an independent assessment or verification of the completeness, accuracy or validity of the information obtained. Consequently, EY provides no assurance of any kind with respect to, or on, the information presented.

There will usually be differences between projected and actual results because events and circumstances frequently do not occur as expected and those differences may be material. As a result, no assurance regarding the achievement of forecasted results is provided, and reliance should not be placed on any forecasted results or projects contained herein as such information is subject to material change and may not reflect actual results. EY takes no responsibility for the achievement of projected results.

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Executive Summary

EY was retained by the Oversight Board to prepare this Report of certain Puerto Rico pension systems as outlined under Section 211 of PROMESA. The pension systems evaluated herein are the:

- ▶ Government Employees Retirement System ("ERS"),
- ▶ Teachers Retirement System ("TRS"), and
- ▶ Judiciary Retirement Systems ("JRS")

Collectively, ERS, TRS, and JRS are referred to in the report as the "Retirement Systems." These two other public sector retirement systems in Puerto Rico are not considered in this Report:

- ▶ University of Puerto Rico Retirement System ("UPR-RS"), and
- ▶ Puerto Rico Electric Power Authority Employees' Retirement System ("PREPA-ERS")

The sections of this Report present the following aspects of the Retirement Systems:

1. The Retirement Systems' legal structure and operations
2. Legacy benefit provisions and existing benefits
3. Historical funding and 30-year actuarial projection
4. Future funding sources and sustainability

Our findings are supported in the body of this Report, supplemented by appendices with additional detail. Considerations regarding retiree income adequacy are dependent on multiple factors and are beyond the scope of this Report.

Please review the Disclaimer closely for limitations on the use, reliance, and accuracy of this Report.

Section One: The Retirement Systems' legal structure and operational analysis

Topic	Key Observations
Government Employee Retirement System ("ERS")	<ul style="list-style-type: none"> ▶ ERS, the primary multi-employer retirement system in Puerto Rico, was established by Act 447 of 1951 ("Act 447") as a Component Unit of the Government of Puerto Rico. ▶ ERS is a multi-employer system, historically managed by an independent board of trustees with pooled contributions from employers and employees. The system manages pensions for 242,000 active members, retirees, and survivors from 197 employers.¹ ▶ Since its establishment, ERS has undergone several legislative changes. However, despite those changes, for a variety of reasons, ERS's assets have been virtually depleted. As of June 30, 2016, the ERS gross assets remaining were approximately \$2.4 billion on an estimated \$36.4 billion actuarial liability. Net assets were negative \$1.2 billion as of the same date because of a \$3.1 billion pension obligation bond issuance in 2008.² ▶ ERS is materially underfunded.
Teachers Retirement System ("TRS") and Judiciary Retirement Systems ("JRS")	<ul style="list-style-type: none"> ▶ TRS, established by Act 218 of 1951 (structure and benefits, repealed and replaced by Act 91 of 2004), and JRS, established by Act 12 of 1954, were also established as Component Units of the Government of Puerto Rico and have undergone multiple legislative reforms over time. ▶ Despite repeated efforts to increase the long-term funded status of these pension systems, the assets at TRS and JRS are almost fully depleted. As of June 30, 2016, for instance, the TRS gross assets were approximately \$895.5 million on an estimated \$18.2 billion actuarial liability.³ ▶ TRS and JRS are materially underfunded.
System Underfunding	<ul style="list-style-type: none"> ▶ Several factors contributed to the underfunded status of the Retirement Systems, including: inadequate employer contribution levels, the enactment of special laws granting new benefits without adequate funding for said benefits, early retirement programs, debt issuance the ERS system ultimately could not support, mortgage, personal, and cultural loans made to participants in each retirement system, among other actions.

¹ Communication with ERS staff.

² Puerto Rico Government Employees Retirement System, June 30, 2016 Actuarial Valuation Report.

³ Puerto Rico Teachers Retirement System, June 30, 2016 Actuarial Valuation Report.

Social Security	<ul style="list-style-type: none">▶ Except for employees in the police department, ERS participants from all other employers have historically paid Social Security taxes.▶ On July 19, 2019, then-Governor Ricardo Rosselló enacted Act 71 of 2019 which reduced the mandatory employee retirement contribution for police officers from 8.5% to 2.3% (optional for officers with less than 10 years until mandatory retirement).⁴ The reduction of the retirement contribution disqualified these police officers from having a qualified Federal Insurance Contributions Act ("FICA") retirement replacement plan under federal law. Consequently, unless a police officer receives an exemption, going forward, all police officers will be required to contribute to Social Security. After 40 quarters of contributions, those employees will be entitled to Social Security benefits in accordance with federal law.▶ Like police officers, teachers and judges in Puerto Rico have also not historically contributed to Social Security and are not eligible for Social Security benefits. The certified Fiscal Plan calls for teachers and judges under the age of 45 to start contributing to Social Security by January 1, 2020, although Puerto Rico's laws have not yet been amended in such a way that would require those individuals to contribute to Social Security.▶ An employee's contribution to Social Security is calculated as a percentage of total wages whereas an employee's contribution to the Defined Benefit system is calculated as a percentage of base pay, excluding overtime.⁵
Data Limitations	<ul style="list-style-type: none">▶ There are certain limitations with existing pension data, which produces variability in the forecasts for the Retirement Systems. While the data allows for directionally reliable projections and determination of actuarial liabilities used to perform the actuarial analysis of the systems, there are gaps in certain data records for certain participant categories in each system, as disclosed in the actuarial valuation reports.⁶▶ For example, there are gaps in the census records for deferred vested participants. Accordingly, ERS' actuaries increased the actuarial liability for certain participants to approximate the value of these participants liabilities.⁷ Consequently, valuing this portion of the obligation requires the Oversight Board to incorporate additional assumptions. In addition, certain elements of plan administration are made more difficult because of poor data quality.

⁴ Puerto Rico's Police Department ("PRPD") has begun a process to register the elections by police officers with less than 10 years until retirement to enroll or not enroll in social security. The PRPD issued 5,284 police officers notices of registration, of which 4,005 officers opted in, 342 opted out, and 937 did not respond. Final determinations on enrollment for this population are still being processed.

⁵ Social security employment taxes are calculated on all pay given to an employee (Social Security Publication 15, Circular E). Individual contributions to retirement plans are calculated off of base compensation excluding overtime and bonuses (Act 106-17, Section 1.6(d) and (u)).

⁶ The publication of actuarial reports is frequently delayed, inhibiting transparency into the systems' obligations. As of the date of this report, the last published ERS actuarial report was for FY 2016.

⁷ Puerto Rico Government Employees Retirement System, June 30, 2016 Actuarial Valuation Report

Compliance and Coordination	▶ The PayGo structure requires continuous coordination between the Treasury and the newly created Retirement Board, and depends on the participating entities (Government, public corporations, and municipalities) to make complete and timely payments to fund PayGo.
Pension Payment Streams	▶ Since the enactment of Act 106-2017, several local laws were passed to either direct new revenue to fund legacy pensions, exempt certain ERS employers from paying PayGo fees starting in FY 2020, or appropriate money from the General Fund toward defined contribution participants. These laws include Act 257-2018, Act 297-2018, Act 29-2019, Act 81-2019, and Joint Resolution 43-2019 (submitted as House Joint Resolution 513), among others.

Section Two: Legacy benefit provisions and existing benefits

Topic	Key Observations
Benefit Formulas	<ul style="list-style-type: none"> ▶ For all Retirement Systems, pension benefit formulas vary based on when an employee was hired. In 1999, for instance, the ERS defined benefit program was closed to new hires and replaced with a hybrid cash account program. As a result, starting in 2000, benefits were based on employee contributions although the withheld proceeds were deposited in the existing ERS pension trust account. A similar arrangement was implemented for TRS and JRS in 2014, although a subsequent court ruling limited the change to new hires only. ▶ Additionally, changes were made to benefit levels in the Retirement Systems over time which increased benefit costs such as: <ul style="list-style-type: none"> ○ Early retirement incentive programs ○ Cost of Living Adjustments (COLAs) ○ Various bonuses, such as a Medical Insurance Contribution as well as Christmas and Summer bonuses
Benefit Reductions from Act 3-2013 and Act 106-2017	<ul style="list-style-type: none"> ▶ In recent years, Act 3-2013 and Act 106-2017 resulted in some of the largest benefit reductions to date. While these acts impacted participants to varying degrees, some participants saw reductions in benefits as high as 82%. The impact and magnitude of these reductions are analyzed further in Section 2.5. ▶ These Acts imposed several notable changes: further increasing the retirement age, eliminating or reducing special law benefits, eliminating merit pensions, further increasing employee contribution requirements, and annuitizing benefit payments. ▶ Since 2007, ERS and TRS retirees, with limited exceptions, have also not received Cost of Living Adjustments (“COLAs”), the absence of which can effectively be viewed as an additional benefit reduction. Without COLAs, certain pensioners could experience a 39% loss in purchasing power 30 years after retirement. An analysis of this loss in purchasing power is detailed further in Section 2.7.
Special law benefits	<ul style="list-style-type: none"> ▶ Certain benefits are paid by the Retirement Systems directly, not the sponsoring employers, further reducing the funded status of the plans. While certain bonuses were eliminated prospectively for JRS members hired after December 24, 2013 and ERS and TRS members retired after July 1, 2013 and August 1, 2013, respectively, these amounts continue to be paid to members that retired before these changes went into effect.

<p>Defined Contribution Accounts</p>	<ul style="list-style-type: none"> ▶ With the establishment of PayGo under Act 106-2017, new defined contribution (“DC”) accounts were to be established for all active workers not currently accruing a pension under a defined benefit formula. ▶ The Retirement Board (as defined in Act 106-2017) is empowered to manage the implementation of the DC benefit plan, including hiring service providers and financial institutions to operate the plan.
<p>Employee Contributions</p>	<ul style="list-style-type: none"> ▶ Since the enactment of Act 106-2017, employee contributions to the DC plan have been deposited into a separate account in the custody of the Treasury with the objective of funding individual DC accounts in the future. ▶ In January 2019, accumulated contributions to date, together with ongoing contributions, were deposited into a Temporary Trust. ▶ The final implementation of the DC benefit plans will result in these funds being transferred from the Temporary Trusts into a DC trust with individual accounts and managed by a third-party administrator.
<p>Vendor Management for Defined Contribution and Defined Benefit Plans</p>	<ul style="list-style-type: none"> ▶ On February 15, 2019, the Government announced Alight Solutions Caribe Inc. was selected and tasked with the implementation, administration and management of the DC plan. Additionally, Gavion LLC was selected as the investment advisor, Banco Popular was selected as the trustee, and Bank of New York Mellon was selected as custodian. ▶ The Retirement Board’s implementation plan calls for DC plan participants to receive access to their new accounts between September 30, 2019, and October 15, 2019, at which point the Temporary Trust balances will be funded into the DC plan trust. ▶ An organized process to select a third-party vendor that will administer the historical defined benefit (“DB”) pension programs is planned but has not yet commenced.

Section Three: Historical funding and 30-year actuarial projection

Topic	Key Observations
Employer Contributions	<ul style="list-style-type: none"> ▶ Employer contributions were historically defined by statute as a percentage of compensation for employees in the system. ▶ With a declining population of active participants and a growing retiree population receiving retirement benefits, payroll-based contributions were insufficient to fund the Retirement Systems on an actuarially determined basis. ▶ For decades, these amounts were significantly smaller than the actuarially required retirement contribution determined annually, and disclosed, by the system actuaries. ▶ Variances from actuarial assumptions (i.e. increases in life expectancy) resulted in increases in benefit payments beyond previous projections.
Pension Obligation Bonds	<ul style="list-style-type: none"> ▶ In 2008, ERS issued approximately \$3 billion in Pension Obligation Bonds ("POBs"). ▶ Pursuant to the Title III automatic stay and the Moratorium Act, ERS is not currently making payments on this debt.
Past Legislative Reforms	<ul style="list-style-type: none"> ▶ As the funded status of the Retirement Systems declined, various legislative actions were taken to improve the funded percentage and sustainability of the plans. <ul style="list-style-type: none"> ○ In 2013, for instance, the Retirement Systems instituted additional employer contributions to maintain system solvency, such as the Additional Uniform Contributions (AUC) for ERS and Annual Additional Contribution (AAC) for TRS and JRS. ▶ With the exception of the Central Government, many employers made their required contributions, however, the contributions made after the 2013 pension law changes were inadequate on a statutorily required and actuarially determined minimum basis. ▶ As of June 30, 2016, past due AUC amounts reached \$180 million for ERS and AAC past due amounts exceeded \$24 million for JRS and TRS.

**Fiscal Plan
Projected Benefit
Payments**

- ▶ Total benefit payments in the certified Fiscal Plan for the Retirement Systems under the PayGo regime are projected to remain steady, above \$2.1 billion annually for Fiscal Plan employers, through FY 2031.⁸ This occurs because active employees with accrued defined benefits eventually retire and begin receiving their pension benefits.
- ▶ After FY 2031, benefit payments begin to decline considerably because of the closing, and freeze of, ERS legacy defined benefit accruals on July 1, 2013, and the TRS closing the defined benefit structure to new hires effective August 1, 2014, along with the TRS freeze contemplated by the certified Fiscal Plan effective January 1, 2020.
- ▶ The certified Fiscal Plan assumes JRS will also be frozen as of January 1, 2020, including closing the plan to new entrants. Until the freeze, JRS participants will continue earning benefits under a defined benefit formula so the benefit payments remain steady for a longer period, although they represent less than 3% of the cumulative projected benefit payments.

⁸ In addition to pension payments included in the certified Fiscal Plan, the PayGo expenditures covers payments for non-Fiscal Plan entities, public corporations and municipalities, in the amount of approximately \$345 million annually, declining after FY 2031. The Government invoices monthly these non-Fiscal Plan entities (and any non-Central Government entities) for reimbursement.

Section Four: Future funding sources and sustainability

Topic	Key Observations
PayGo Expenditure Source	<ul style="list-style-type: none"> ▶ The certified Fiscal Plan forecasts PayGo benefit payments as a current operating expense. ▶ The certified Fiscal Plan, however, also reflects that absent further government initiatives, PayGo expenditures are expected to constitute more than 20 percent of General Fund expenditures. ▶ Furthermore, the Commonwealth is projected to have operating expenses exceed revenues beginning in FY 2038 notwithstanding the 2013 ERS freeze, proposed freezes to ongoing TRS and JRS accruals, and proposed cuts to previously accrued benefits.
Additional Budgetary Steps Recommended by the Oversight Board	<ul style="list-style-type: none"> ▶ Due to the funding shortfall and fiscal deficits projected to emerge in FY 2038, the certified Fiscal Plan references additional actions the government can take to achieve budgetary balance to be able to pay all budgetary expenses, including pension benefits, in deficit years.
Forecast Variability	<ul style="list-style-type: none"> ▶ Several variables also have a material impact on the long-term financial projections of the certified Fiscal Plan. For example, structural changes to the economy and demographic shifts could result in lower projected growth and compromise surpluses.
Pension Reserve Fund	<ul style="list-style-type: none"> ▶ As part of the agreement reached with the Official Committee of Retirees ("COR"), the Oversight Board agreed to the establishment of a pension reserve fund to be held in a trust for the sole benefit of retirees and funded through annual fiscal plan surpluses projected to be available through FY 2027. After this point, amounts will be withdrawn in a formula to be determined to meet the Commonwealth's annual PayGo obligations in years when the certified Fiscal Plan projects deficits. ▶ The pension reserve fund is intended to support the long-term sustainability of the Retirement Systems by providing an additional funding source for retirement benefits in the future, including during the period in which the certified Fiscal Plan projects annual deficits for the Commonwealth. ▶ Changes to projected available surpluses would impact the ability of this pension reserve fund to meet future PayGo expenditures. ▶ Ultimately the ability to make PayGo expenditures in the amounts projected in the certified Fiscal Plan is contingent on overall management and planning for future projected deficits.

Section One: The Retirement Systems' legal structure and operations

1.1 Creation of ERS, TRS and JRS

The Retirement Systems were introduced through legislation enacted between 1951 and 1954. The benefits provided to members of the Retirement Systems are established by law and have been amended over time since their initial introduction.

ERS was created by Act 447 of 1951, as amended, to provide pension and other benefits to retired government employees, including the public corporations and the municipalities of Puerto Rico. ERS is structured as a cost-sharing, multiple-employer benefit plan. The most recent significant amendments to benefits provided under ERS were enacted under Act 3 of 2013 ("Act 3"), which amended Act 447, Act 1, and Act 305. Among other measures, Act 3 reduced benefits, increased employee contributions, and, in the case of active employees who were entitled to the defined benefits program, replaced most of the defined benefit elements with a defined contribution structure. For a more detailed analysis on the impact of Act 3, see Section 2.

TRS was established in 1951 by Act 218 of 1951, as amended, to provide pension and other benefits to teachers and other employees of the Puerto Rico Department of Education. The most recent significant amendments to benefits provided under TRS were enacted under Act 160 of 2013. As enacted, Act 160 froze benefits accrued to active participants, transferred members into a defined contribution plan, eliminated merit pensions, raised the retirement age, increased required contributions, increased employer contributions, modified or eliminated special law benefits, and modified benefits for disability or survivors.⁹ On April 11, 2014, however, the Puerto Rico Supreme Court struck down the sections of Act 160-2013 that amended the pension benefits of active teachers who were participants in TRS at the time on the grounds that the Commonwealth had not proven that the amendments would maintain the solvency of TRS. As a result, teachers hired before the approval of Act 160-2013 continue to enjoy their prior retirement benefits.

JRS was created in 1954 by Act 12 of 1954 to provide pension and other benefits to judges and other employees of the Judiciary Branch of the Commonwealth. The most recent significant amendments to benefits provided under JRS were enacted under Act 162 of 2013. As enacted, Act 162 created a hybrid plan, reduced disability benefits, reduced pension benefits and survivor benefits, increased the employee contribution, and eliminated Christmas, Summer, and medicine bonuses. On February 21, 2014, the Puerto Rico Supreme Court upheld the constitutionality of Act 162-2013, but only with respect to judges appointed on or after December 24, 2013, the date Act 162-2013 was enacted. As a result, judges appointed before the approval of Act 162-2013 continue to enjoy their prior retirement benefits.

A summary of the composition of the members of each plan is presented below, based on the most recently available census data from the systems' actuary (*Exhibit 1*). In addition, participating employers in the Retirement Plans are detailed in Appendix H.

⁹ Act 160-2013

EXHIBIT 1: CENSUS DATA FOR THE RETIREMENT SYSTEMS AS OF JULY 1, 2015-2016

Retirement Systems	ERS		TRS ¹⁰	JRS
	CW Fiscal Plan entities	Total		
Active members	71,194	118,657	32,952	364
Pensioners and beneficiaries	96,267	122,757	43,305	514
Terminated vested members	Unknown ¹¹	Unknown	1,100	39
Average age of pensioners	70.6	70.7	69.6	73.3
Average monthly benefit	\$1,017	\$995	\$1,428	\$4,495
Median monthly benefit	\$675	\$651	\$1,435	\$5,409
Census date	July 1, 2016		July 1, 2016	July 1, 2015
Date of receipt of census data	October 29, 2018		April 5, 2019	June 21, 2018

Most current ERS and TRS retirees still live in Puerto Rico. The latest data from the Retirement Systems indicates as many as 114,000 ERS retirees and 42,000 retired teachers likely still live in Puerto Rico.¹²

The Retirement Systems were intended to be funded based on legislatively mandated employer and employee contributions through separate statutory trusts. More detail related to actual historical funding practices is contained in Section 3 of this Report.

In 2017, the government enacted Act 106-2017 ("Act 106"), an "Act to Guarantee Pension Payments and Establish a New Defined Contributions Plan for Public Employees." The legislation had several fiscal implications, including:

- ▶ It established the PayGo system, whereby disbursements shall be made for all current retirees and their survivors, as well as future retirees and their survivors with respect to their accrued benefits (other than those benefits covered by the new DC plan), as provided in the certified Fiscal Plan,
- ▶ It eliminated employer contributions that the Government had been making to the Retirement Systems, and replaced them with payments to the PayGo account,
- ▶ It established the prospective Defined Contribution ("DC") plans, to be funded by the contributions from current employees (except certain TRS and JRS participants covered under the defined benefit plants), and
- ▶ It established sanctions against agency heads and public officials who fail to remit each participants' contributions to their accounts on a timely basis.

¹⁰ Excludes teachers hired after August 1, 2014 under Act 160-2013 whose hybrid account balances were to be transferred to DC accounts per Act 106-2017.

¹¹ The valuation reports assume loads of either 2.5% or 5.0% as a place holder for liabilities associated with terminated vested members who may claim a benefit in the future, depending on the year being considered.

¹² Luis Collazo, executive director of the Retirement Board, February 12, 2019.

1.2 Operational analysis

Prior to the enactment of Act 106, the Retirement Systems operated much like any U.S. public pension system funded through a statutory trust and generally followed Public Pension Coordinating Council ("PPCC") guidance. The PPCC establishes Public Pension Standards (the "Standards") to reflect minimum expectations for public retirement system management, administration, and funding. The Standards serve as a benchmark by which to measure public defined benefit plans. All public retirement systems and the state and local governments that sponsor them are encouraged by the PPCC to meet the Standards. See Appendix C for details related to these Standards.

On an operational level, the Retirement Systems met these Standards to some degree. The systems conducted actuarial valuations and audits, maintained written investment policies and fiduciary standards, periodically commissioned performance evaluations of their investment advisors, held regular boards of trustee meetings and communicated to members. On the other hand, the following administrative and operational practices present challenges to plan operations and financial reporting:

1. **Much of the systems' census data records are still paper based and some of the data is incomplete.** Data that should be readily available as part of ongoing plan administration are not tracked, and therefore the actuary is forced to make approximations to adjust plan liabilities for these unknowns. For example, the benefits for ERS members that are no longer employed by the government but are entitled to a future pension, referred to as terminated vested participants, are not explicitly tracked.

The system actuaries include a placeholder of an additional 2.5% - 5.0% accrued liability attributable to these members, or approximately \$900 million as of June 30, 2017. Similar estimates are needed to approximate other missing data elements such as whether current pensioners have elected a form of payment that will continue to a survivor upon death and the value of bonuses currently in payment to certain pensioners. Although these approximations are based on plan experience, they are estimates of incomplete data that would typically be tracked by other systems. Such data limitations can lead to inefficiencies in plan administration and present a risk for misstating plan obligations.

2. **Challenges with system census data can lead to qualified audit opinions and delays in the issuance of actuarial valuations.** These delays can affect the audit of each employer sponsoring benefits under the pension plan.

The Highway and Transportation Authority's ("HTA") audited financial statements provide an example. In HTA's most recent audited financial statements, the auditor expressed a qualified opinion¹³ stating that it did so in part because HTA had not adopted the provisions of various GASB Statements, including:

- ▶ *GASB Statement No. 73 - Accounting and Financial Reporting for Pensions and Related Assets* that are not within the Scope of GASB Statement No. 68, and Amendments to Certain Provisions of GASB Statement No. 67 and 68, and
- ▶ *GASB Statement No. 75 - Accounting and Financial Reporting for Postemployment Benefits other than Pensions*

¹³ A qualified opinion is a statement issued after an audit is completed suggesting that the information being provided is limited in scope.

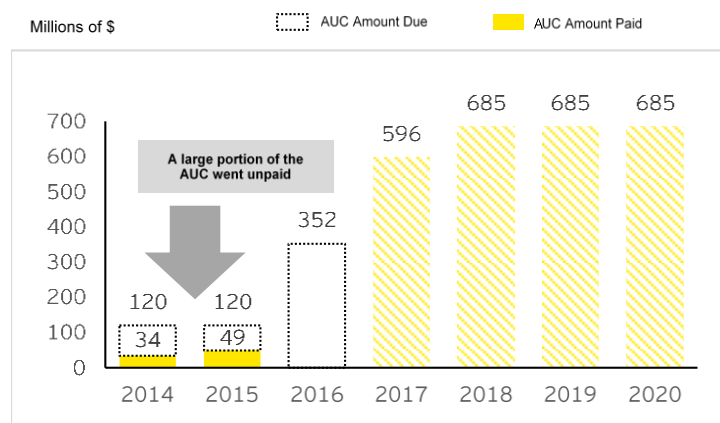
The audit opinion states that HTA was unable to adopt these GASB standards because audited pension information from ERS was not readily available. Consequently, the audit opinion states that HTA did not record the proportionate share of its pension liability and total post-employment benefits obligation deferred inflows of resources, deferred outflows of resources and pension and total post-employment benefits obligation expense.

The audit opinion further states that HTA also did not recognize the effect of current period changes in the net pension liability and total post-employment benefits obligation as it related to deferred inflows of resources, deferred outflows of resources and pension expense for the year ended June 30, 2018.

3. **Plan requirements were not always administered as described by law.** For example, member contributions in TRS were scheduled to increase from 10.0% to 13.12% as of July 1, 2017. The amount of the increase is described in Article 5.5 of Act 160-2013 to be 82.0% of the maximum employer contribution established in Article 4.3(b) of the same Act for FY17 - FY18. The maximum employer contribution for that fiscal year was 16% of monthly salary accordingly with Act 160-2013. Accordingly, the calculated increase for that fiscal year would have been 13.12%. Administrators from the Retirement Board confirmed that the employee contribution rate did not increase and remained at 10.0%.

Additionally, after the enactment of Act 32-2013, government employers were required to make Additional Uniform Contribution payments to ERS. The initial ERS AUC for fiscal year 2014 was established by Act 244-2014 at \$120 million, of which approximately \$83.3 million was allocable to the Central Government and its subsidized public corporations and to be funded from the General Fund, and the balance of which was allocable to the municipalities and other participating public corporations. For fiscal year 2015 and until fiscal year 2033, the ERS AUC was required to be determined actuarially prior to the start of each fiscal year as the amount necessary to avoid having the projected gross assets of the ERS during any subsequent fiscal year fall below \$1 billion. While several municipalities and public corporation employers made their required payments in the initial years, as shown below (*Exhibit 2*), a large portion of the AUC went unpaid.

EXHIBIT 2: EMPLOYEES RETIREMENT SYSTEM ADDITIONAL UNIFORM CONTRIBUTION



The amounts for 2017-2020 were determined as part of the July 1, 2016 valuation results. Act 106-2017 eliminated these funding sources altogether, including the elimination of future member funding for those no longer accruing DB benefits

1.3 Conversion to PayGo

Act 106-2017, an “Act to Guarantee Pension Payments and Establish a New Defined Contributions Plan for Public Employees,” among other actions, established a new PayGo pension structure.

Under this method, the Puerto Rico Treasury Department (“Treasury”) created a separate payment account distinct from other government assets which would receive appropriations as the sole fund source for the disbursement of pension benefits. All other employer contributions to the Retirement Systems were eliminated including the statutory payroll contributions and supplemental employer contributions previously intended to improve plan funded levels (see discussion in Section 3 of this Report). For agencies that no longer exist, but for which there are still retirees, the Treasury segregates a budget line for payments to those retirees.

Under PayGo, participating public corporation and municipal entities are invoiced in an amount equivalent to the annual amount payable to each retiree and survivor of that agency. The PayGo invoices are paid by the invoiced party out of the General Funds or Special Revenue Funds of such entities.

1.4 Current administration of PayGo charges

Typically, pension funds receive employer contributions, whether as a percent of payroll or as otherwise defined, and the pension fund makes benefit payments from a trust when they come due. For a PayGo system to successfully make benefit payments, however, there is dependence on the participating entities to make timely and complete payment of their share of PayGo costs for that year. Under the Commonwealth’s PayGo system, this includes the central government, public corporations and municipalities. See Appendix D for a breakdown of the budgeted pension expenditures in FY 2020.

Section 1.6(g) of Act 106 mandates that all participating Municipalities and Public Corporations in ERS must pay the PayGo fee. Section 2.1(f) also states every government entity shall earmark the funds needed for the payment of the PayGo fee in their annual general fund budgets.

Notwithstanding Section 1.6(g) and Section 2.1(f) of Act 106, the “PayGo and Individual Contribution Debt by Entity” report dated June 30, 2019 (“FYE 2019 PayGo Report”) submitted monthly by Autoridad de Asesoría Financiera y Agencia Fiscal de Puerto Rico (“AAFAF”) to the Oversight Board indicates there is approximately \$93 million in accrued debt from 24 public corporations and \$126 million from 50 municipalities since implementation of the PayGo system in 2017. See below for more detail (**Exhibit 3**).

EXHIBIT 3: PUBLIC CORPS AND MUNIS OWING MORE THAN \$1M IN PAYGO (\$ IN THOUSANDS)¹⁴

PUBLIC CORPORATIONS				MUNICIPALITIES			
Entity (\$ in thousands)	FY2018	FY2019	Total	Entity (\$ in thousands)	FY2018	FY2019	Total
PR Ports Authority	\$ 22,686	\$ 546	\$ 23,232	San Juan	\$ 20,433	\$ 56,026	\$ 76,459
Metropolitan Bus Auth.	13,588	2,361	15,949	Toa Baja	3,388	3,459	6,847
Industrial Development Co.	-	11,584	11,584	Arecibo	2,947	3,526	6,473
Admin. Agric. Dvlp't & Service	-	10,748	10,748	Mayaguez	1,514	4,590	6,104
PRASA	3,287	2,219	5,506	Ponce	-	4,874	4,874
Land Authority	2,488	2,950	5,438	Carolina	-	4,874	4,874
Agric. Extension Service	-	4,838	4,838	Caguas	2,271	565	2,836
Office Of The Controller	3,912	-	3,912	Cayey	1,031	1,530	2,561
State Insurance Fund Corporation	1,258	2,431	3,689	Guaynabo	-	2,100	2,100
Trade & Export Co.	2,303	404	2,707	Santa Isabel	727	899	1,626
CRIM	1,677	422	2,099	Cabo Rojo	730	822	1,552
PR Land Administration	1,982	-	1,982	Subtotal	\$ 33,041	\$ 83,265	\$ 116,306
Subtotal	\$ 53,180	\$ 38,504	\$ 91,684	Other Munis	3,830	6,197	10,027
Other Entities	185	778	963	Grand Total	\$ 36,871	\$ 89,462	\$ 126,333
Grand Total	\$ 53,365	\$ 39,282	\$ 92,647				

¹⁴ Source: Fiscal Agency and Financial Advisory Authority, PayGo and Individual Contribution Debt by Entity, September 15, 2019

The payment by all non-Central Government employers of PayGo fees is the mechanism used to fund pension payments to retirees and survivors associated with those employers. While PROMESA requires the adequate funding of pensions, and the Oversight Board has expressed it will continue to make sure pensions are adequately funded, Section 16 of the certified Fiscal Plan assumes these costs will be fully paid by each respective entity. Therefore, there are no appropriations assumed in the certified Budget to fund PayGo benefits for retirees of non-paying municipalities and public corporations without prompt reimbursement by them.

In a letter dated April 30, 2019, the Oversight Board cited continued payment of retirement benefits without reimbursement from delinquent employers is an unauthorized expenditure under the certified Budget and that all efforts must be taken to collect these delinquent debts or offset these incremental unbudgeted expenses within other areas of the Budget. This arrangement also requires significant coordination between the Treasury and the Retirement Board, which is an uncommon interdependency for public pension funds, particularly ones of this size.

Several laws were recently passed that either amend PayGo fees under Act 106 or propose the appropriation of General Fund monies towards retirement benefits. These laws include:

- ▶ **Act 257-2018** - Among other actions, dedicates 50% of anticipated revenue from the tax on legalizing gaming machines that rely on the element of chance to fund police pensions.
- ▶ **Act 297-2018** - Among other actions, dedicates the anticipated revenue from the imposition of \$250 to \$500 penalties under such law to the PayGo account under Act 106.
- ▶ **Act 29-2019** - Among other actions, eliminates the responsibility of municipalities to reimburse the Government for PayGo fees incurred in FY 2020. The Oversight Board filed suit against the government in July 2019 seeking to enjoin the enforcement of Act 29-2019. On August 22, 2019, the Title III court denied the government's motion to dismiss the Oversight Board's lawsuit on this matter.
- ▶ **Act 81-2019** - Among other actions, dedicates 50% of anticipated revenue from the legalization of onsite and online betting on professional and college sports events, as well as video-game and fantasy sports leagues, to fund pensions (after funding the commission established by the Act).
- ▶ **Joint Resolution 43-2019 (submitted as House Joint Resolution 513)** - Deposits \$1.4 billion from the General Fund into a pension trust for government employees to restore past contributions made by public servants to individual retirement accounts under the System 2000 hybrid defined contribution program that ran from 2000 through 2017. The Oversight Board is opposed to the enactment of the measure stating that "it would be in violation of and be preempted by Sections 4 and 202 of PROMESA".¹⁵

¹⁵ Source: July 2, 2019 Letter from Natalie Jaresko, Executive Director of the Oversight Board to then-Governor Rosselló

Section Two: Legacy benefit provisions and existing benefits

2.1 Legacy traditional defined benefit formulas

The Retirement Systems were initially structured as traditional Defined Benefit (“DB”) plans. Under a DB plan, a formula defines the benefit payable upon retirement, with the employer bearing the responsibility of securing adequate funding to deliver the benefit amounts. In Puerto Rico, the DB formulas were determined based on years of service and compensation levels. DB formulas are available to system members as follows:

- ▶ For ERS, a DB formula is available to members hired prior to January 1, 2000, with different formulas applicable to pre-April 1, 1990 hires (Act 447 members) versus post-April 1, 1990 hires (Act 1 members).
- ▶ TRS members hired prior to August 1, 2014 currently accrue benefits under a DB formula.
- ▶ All JRS members currently accrue benefits under a DB formula. Members hired July 1, 2014, or later have a reduced DB formula. JRS members hired after July 1, 2014 also accrue benefits under a separate hybrid account.

2.2 Bonuses and other special payments

Special Laws, which are a series of post-employment benefits granted to ERS, TRS, and JRS participants through enabling legislation passed by previous legislatures, provide incremental retirement benefits to participants beyond those which are provided for under the original benefit structures. Many of the Special Laws appear to have been introduced and approved throughout the years without the enactment of long-term, viable funding sources. The various benefit enhancements and special law benefits, include:

- ▶ **Past Ad Hoc Increases** - The Legislature, from time to time, increased pensions for certain retirees
- ▶ **Additional minimum pension benefits** - These are benefits paid to plan participants that supplement the core pension benefit the participant receives. Paid to ERS participants retiring prior to July 1, 2013 and TRS participants hired prior to August 1, 2014
- ▶ **Christmas Bonuses** - An annual bonus of \$200 is paid to each retiree, beneficiary, and disabled member for ERS members that retired prior to July 1, 2013, and TRS retirees prior to August 1, 2013, and \$600 for JRS retirees hired prior to December 24, 2013
- ▶ **Medication bonuses** - An annual bonus of \$100 for each retiree, beneficiary, and disabled member to cover health costs paid in July provided the member retired prior to certain retirement dates. Evidence of coverage is not required
- ▶ **Summer bonuses** - JRS retirees hired prior to December 24, 2013 receive an annual \$100 bonus paid in July
- ▶ **Cost-of-living adjustments (COLAs)** - The Legislature, from time to time, increased pensions by 3% for retired and disabled members. The first increase was granted by Act 10-1992. Subsequent 3% increases were granted every third year since 1992, with the latest 3% increase established in Act 35 of 2007 for ERS defined benefit plan participants

- ▶ **Medical insurance plan contributions** - Covers a payment of up to \$100 per month to the eligible medical insurance plan selected by the member provided the member retired prior to July 1, 2013 for JRS and ERS participants and August 1, 2013 for TRS members
- ▶ **Disability benefits for high-risk positions** - Police, firefighters, and other employees in specified high-risk positions who are disabled in the line of work due to reasons specified in Act 127-1958 receive 80% (100% for Act 447 members) of compensation as of the date of the disability, payable as an annuity
- ▶ **Additional minimum death benefits** - Pursuant to Act 160-2013 (TRS) and Act 12-1954 (JRS), beneficiaries of deceased participants hired prior to August 1, 2014 are entitled to certain benefit payments that shall be no less than \$1,000

The special law benefits were structured to be paid in part by the Retirement Systems and in part by the members' employer. The employer portion was also paid through the trust of each respective plan and were referred to as "System Administered Benefits." These System Administered Benefits were to be appropriated into the trusts by the General Fund or by the public corporation of municipality for their former employees. However, the appropriations were not always sufficient to fund the benefits, and plan assets were used to fund these special benefits. As of the latest actuarial reports, System Administered Benefits account for nearly \$3.7 billion in ERS, TRS, and JRS total liabilities.¹⁶

2.3 Early retirement and voluntary termination programs

The Government also adopted various early retirement programs to reduce the size of the government workforce. The effects from various voluntary termination programs ("VTPs") and early retirement offerings impact the pension PayGo forecast. In 2019, three separate VTPs were offered which covered a total of 5,455 employees receiving \$14.3 million in payments. Since 1994, more than 20 early retirement programs have been implemented.¹⁷

Although these measures reduced payroll expenses, which are a substantial portion of governmental expenses, including for the General Fund, early retirement programs also reduced the Retirement Systems' revenues because they decreased employer and employee contributions. Furthermore, the resulting increased retirement benefit disbursements by the Retirement Systems triggered by these programs were generally not accompanied by upfront funding or timely reimbursement from the participating employers resulting in a negative cash flow impact. These increases are also not reflected in the current PayGo estimates calculated by the system actuaries.

2.4 Life expectancy changes

Another factor that contributed to the deterioration of the Retirement System funded status was the increase in the average life expectancy in Puerto Rico and the United States. Benefits from the Retirement Systems are generally payable over the life of a pensioner, and in some cases continue to a survivor after the pensioner is deceased. An increase in life expectancy causes retired pensioners to receive benefits for more years than originally expected.

¹⁶ "Actuarial Valuation Report". June 30, 2016, Puerto Rico Judiciary Retirement System; "Actuarial Valuation Report". June 30, 2016, Puerto Rico Teachers Retirement System; "Actuarial Valuation Report". June 30, 2016, Puerto Rico Government Employees Retirement System

¹⁷ Motive Statement of Act 3-2017.

In developing the Retirement Systems liabilities and Annual Required Contribution (“ARC”), the system actuaries utilized a mortality table with assumed rates of mortality for different ages, varying by male and female pensioners. The assumptions are based on knowledge of the covered population and industry mortality trends. Based on the actuarial valuation report produced in 1965 for ERS¹⁸, the life expectancy for collecting pensions for a 55-year-old at that time was 22.6 years for men and 26.7 years for women. By 2019, mortality assumptions have improved to utilize: i) actual system experience in determining base mortality rates, and ii) expectations for future mortality improvements have been incorporated based on studies released by the Society of Actuaries. The resulting effect is that the expected amount of payment years had increased by 35% for men to 30.6 years and by 30% for women to 33.4 years.

2.5 Hybrid accounts

As identified above, each system provides different types of benefits dependent on each member’s date of hire. The pension systems have historically required participant contributions, regardless of the benefit formula in place.

Because of the continuing increase in the unfunded liability, the original defined benefit structure was closed to new plan members joining ERS on or after January 1, 2000. To provide a retirement alternative, the pension benefit structure was further amended by Act 305 of 1999 to provide for a cash balance program, similar to a cash balance plan, that would be funded only by participating employees’ contributions. This Retirement Savings Account Program (“System 2000”) was created to provide an employee-funded retirement benefit administered by ERS.

Under System 2000, the employers’ contributions were set at 9.275% for System 2000 participants and were used to fund the accrued actuarial liability of the ERS. Also, under System 2000, the disability benefits were to be provided through a private insurance long term disability program to those plan members that voluntarily elected to enroll in such program.

For ERS employees hired on or after January 1, 2000, mandatory participant contributions were directed into a “hybrid”, or notional retirement account, credited with notional interest earned, and upon retirement would be converted into a lifetime annuity. Additionally, Act 447 of 1951 and Act 1 of 1990 participants had their benefits replaced with this structure effective July 1, 2013, going forward, in connection with freeze of their benefit accruals under the legacy traditional DB formulas. Act 3 of 2013 also amended the ERS Act to create a Defined Contribution Hybrid Program (hereinafter, the “Hybrid Program”), through which individual contribution accounts were created for all active participants enrolled in the ERS. Under the 2013 Amendments, in the case of employees participating in the Savings Program (System 2000 Participants), the funds allocated within the savings accounts were intended to be transferred to the contribution accounts under the Hybrid Program. In practice, large portions of employee contributions were used to pay benefits to current pensioners, rather than being set aside for future retirees.

Other characteristics of System 2000 consist of the following:

- ▶ No employer match or contribution,
- ▶ Contribution accounts were not segregated since the accounts were intended to be notional,
- ▶ In most cases, participants were not eligible to receive funds in the form of a lump sum, and
- ▶ Participants were sent quarterly statements that showed their notional balance.

¹⁸ Based on interpolation of mortality rates for sample ages in the Actuarial Calculation Report for the fiscal year ending June 30, 1965, with no projected mortality improvements.

Based on data from the Retirement Systems, the cumulative value of ERS hybrid accounts as of June 30, 2018, including interest credits, was approximately \$2.3 billion, as shown below (*Exhibit 4*).

EXHIBIT 4: ERS HYBRID ACCOUNTS AS OF JUNE 30, 2018 (\$ IN THOUSANDS)

	Employee contributions	Accumulated notional interest	Total
Act 447	\$212,010	14,749	\$226,759
Act 1	493,784	34,818	528,602
System 2000	1,308,893	180,499	1,489,392
Act 3	48,689	2,097	50,786
Total	\$2,063,376	\$232,163	\$2,295,539

After the enactment of Act 3, ERS established that notional interest credits to the hybrid accounts would be defined as 80% of the annual rate of return on the pension trust. With the establishment of the PayGo system under Act 106 and liquidation of plan assets, hybrid accounts have not been credited with interest since July 1, 2017.

A structure based on notional accounts was enacted for TRS participants as well. This was established under Act 160. On April 11, 2014, however, the Puerto Rico Supreme Court struck down the sections of Act 160 that amended the pension benefits of active teachers who were participants in TRS at the time on the grounds that the Commonwealth had not proven that the amendments would maintain the solvency of TRS. As a result, the TRS administered two benefit structures: (i) a contributory, defined benefit plan for active participants hired on or before July 31, 2014, and (ii) a contributory, hybrid plan for participants hired on or after August 1, 2014.

In December 2013, the Commonwealth also enacted Act 162 as a comprehensive reform of JRS. Act 162-2013 sought to establish a new hybrid retirement system for judges appointed after July 1, 2014, which included both a defined benefit and a defined contribution component. On February 21, 2014, the Puerto Rico Supreme Court upheld the constitutionality of Act 162, but only with respect to judges appointed on or after December 24, 2013, the date Act 162 was enacted. As a result, judges appointed before the approval of Act 162 continue to enjoy their prior retirement benefits.

For judges appointed on or after the approval of Act 162, the Puerto Rico Supreme Court interpreted Act 162 as creating two benefits regimes, one for judges appointed between December 24, 2013 and June 30, 2014, as to whom a modified benefits regime applies, and one for judges appointed on or after July 1, 2014, as to whom all provisions of Act 162 apply. For all existing participants who joined JRS between December 24, 2013 and June 30, 2014, the defined benefit plan continued to exist, but with a maximum pension of 60% of salary. For all new participants who joined JRS after July 1, 2014, a new hybrid plan was enacted. JRS participants hired after July 1, 2014 also have contributions tracked in notional accounts, although even post 2014 hires also earn benefits under a defined benefit formula. Approximately 50 new judges were hired from July 1, 2014 through July 1, 2016, resulting in accumulated employee contributions associated with hybrid accounts of approximately \$700,000.

The use of notional accounts for which notional interest is tracked is not an uncommon benefit structure. However, the fact that these accounts were notional and not actually being tracked was not well understood by plan participants. The continued depletion of plan assets, as detailed in Section 3, resulted in the Retirement Systems using contributions made by employees participating under the notional account structure to pay benefits due immediately, rather than being invested to fund benefits payable to these employees in the future.

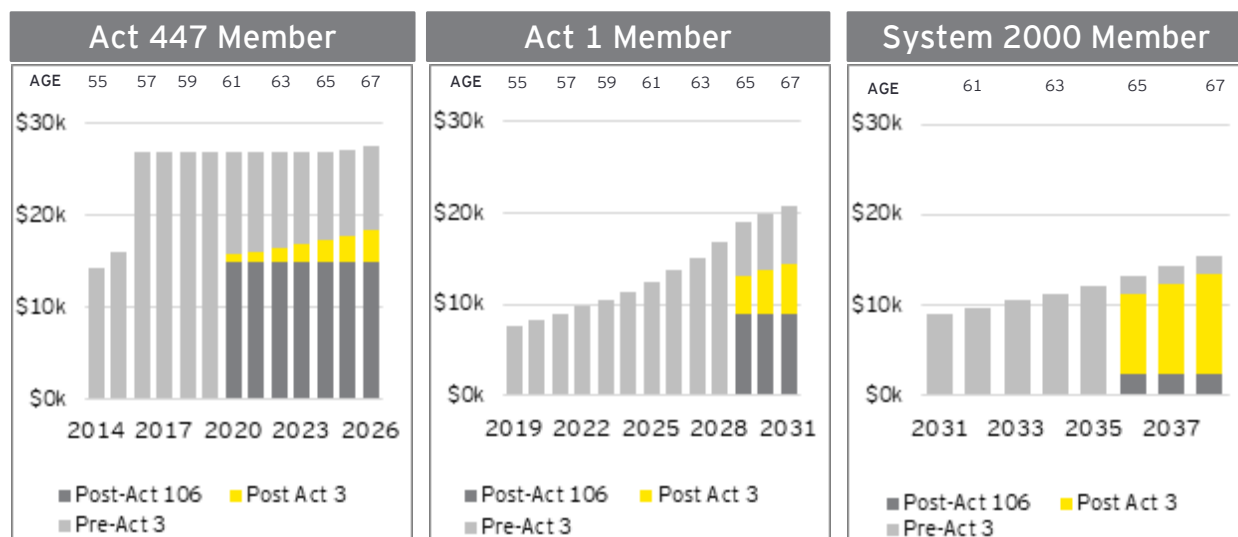
A summary of the status of these notional accounts is as follows:

- ▶ **ERS System 2000 and Act 3-2013 notional accounts** - The value of these notional accounts is still being tracked by ERS. As identified in Section 3.5, as part of the Plan Support Agreement ("PSA") with the American Federation of State, County, and Municipal Employees ("AFSCME"), the value of these accounts, excluding interest, will be transferred to DC accounts and not be subject to cuts. The value of accounts for full Act 3-2013 participants will not be subject to cuts.
- ▶ **ERS Act 447-1951 and Act 1-1990 notional accounts** - As identified in the AFSCME PSA, benefits associated with post-July 1, 2013 employee contributions for Act 447 and Act 1 participants will remain within the PayGo system but will not be subject to cut.
- ▶ **Notional accounts for TRS members hired after August 1, 2014** - Effective July 1, 2017, in connection with Act 106, the value of these notional accounts was to be transferred to defined contribution accounts. Therefore, the TRS system holds no obligation associated with these hybrid benefits. The PayGo costs described in Section 3.5 and Section 3.6 of this Report reflect the segregation of these TRS hybrid accounts and therefore do not include annuitized value of these hybrid accounts in the PayGo projections.
- ▶ **Notional accounts for JRS members** - The value of these notional accounts is still being tracked by JRS. Notional interest has not been applied since the enactment of Act 106. Based on current plan provisions, when individuals with these notional balances retire, JRS will pay out an annuity calculated based on the amount of contributions made by each individual to the plan.

2.6 Act 3-2013 and Act 106-2017 impacts

Act 447, Act 1, and System 2000 members, each group younger than the prior group, were affected differently by Act 3 and Act 106 pension amendments. The exhibit below presents the impacts of these two laws on an *average* participant in these three cohorts of pension participants (**Exhibit 5**). See Appendix F for detail on the assumptions and plan provisions used to develop these illustrations.

EXHIBIT 5: SAMPLE PARTICIPANT BENEFIT REDUCTIONS DUE TO ACT 3 AND ACT 106



Sample Act 447 Member

The most significant losses for this sample participant include:

- ▶ Act 3 delayed the retirement age to 61, resulting in a delay in the date the participant could commence a pension benefit.
- ▶ The Act 3 freeze of pension accruals eliminated the ability of the participant to grow into the enhanced merit pension that was available to pre-Act 3 participants with 30 years of service (the enhancement pre-Act 3 is visible by the large increase from 2015 to 2016 benefit levels in the light gray bars).
- ▶ Bonus payments were eliminated for those not yet retired by the effective date of Act 3.
- ▶ The only accruals post-Act 3 are associated to the annuitized notional accounts, which were frozen as a result of Act 106. The lack of accruals and interest in the notional accounts beginning in 2017 is represented by the yellow Post-Act 3 bars.
- ▶ Additional reductions such as the elimination of the free survivorship benefit are not reflected in the calculated annual estimates shown above but are further outlined in the demographics and law impacts below.

The age 61 annual pension benefit for this sample participant of \$26,830 was effectively reduced by 42% as a result of the Act 3 freezes. Act 106 eliminated the notional interest benefit from the hybrid accounts, reducing the annual benefit to \$14,829, for a cumulative reduction of 44%.

Sample Act 1 Member

The most significant losses for this sample participant include:

- ▶ Act 1 provided for early retirement options at an actuarially equivalent level to their normal retirement benefit. Act 3 delayed retirement commencement eligibility to age 65, eliminating the ability of the member to optionally retire at a younger age.
- ▶ Bonus payments were eliminated for those not yet retired by the effective date of Act 3.
- ▶ The only accruals post-Act 3 are associated to the annuitized notional accounts, which were frozen as a result of Act 106. The lack of accruals and interest in the notional accounts beginning in 2017 is represented by the yellow Post-Act 3 bars.

The age 65 annual pension benefit for this sample participant of \$18,898 was effectively reduced by 31% as a result of the Act 3 freezes. Act 106 eliminated the notional interest benefit from the hybrid accounts, reducing the annual benefit to \$8,868, for a cumulative reduction of 53%.

Sample System 2000 Member

The most significant losses for this sample participant include:

- ▶ The System 2000 member retirement age was delayed (age 65 for this participant) eliminating earlier possible commencement ages.
- ▶ Bonus payments were eliminated for those not yet retired by the effective date of Act 3.

- ▶ As System 2000 benefits were based on annuitized notional accounts and the participants are relatively younger (and would have been anticipating many years of accruals on the accounts), the freezing of these accounts as a result of Act 106 results in a significant reduction in the benefits payable by the pension plan. The elimination of these benefit accruals beginning in 2017 is represented by the yellow Post-Act 3 bars.

The age 65 annual pension benefit for this sample participant of \$13,214 was effectively reduced by 15% as a result of the Act 3 bonus elimination. The lack of accruals and interest in the notional accounts for more than two decades following Act 106 reduced the annual benefit to \$2,322, for a cumulative reduction of 82%.

2.7 Defined contribution accounts

In connection with the establishment of the PayGo system under Act 106, new DC accounts were to be established for all active workers not currently accruing a pension under a defined benefit formula. Act 106 requires that mandatory wage deductions collected from individual employees participating in its new DC retirement plan be held in newly created, segregated and employee-controlled retirement accounts. In addition, as noted above, Act 106 specified that hybrid account balances for TRS members were to be transferred to the new DC accounts.

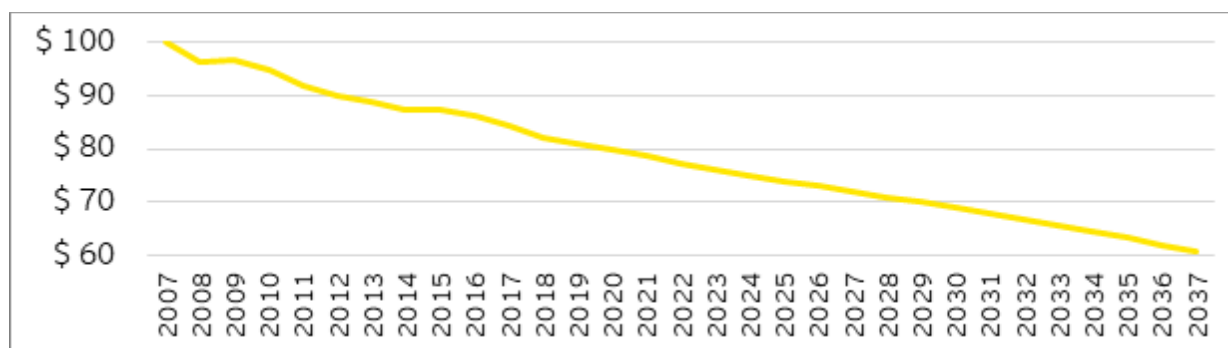
Participants that continue to accrue benefits under TRS and JRS have the option of participating in the new DC plans if they contribute to these plans in addition to member contributions due to their DB plans. The certified Fiscal Plan reflects a freeze to future accruals under these systems effective January 1, 2020, assumes DC accounts will be established for all members of these systems prospectively.

In July 2019, after following an RFP process, Alight Solutions Caribe Inc. was selected to serve as the plan administrator for the Government's DC plans. The plan administrator is tasked with the implementation, administration and management of the DC pension plan. Gavion, LLC was also selected to be the investment advisor responsible for managing the investment alternatives for DC plan participants.¹⁹ Gavion is the existing investment advisor for ERS and JRS. In addition, the Government selected Banco Popular as trustee of the DC trust and Bank of New York Mellon as custodian of the assets of the individual DC accounts within such trust. The Retirement Board expects to enroll all active former ERS participants in the DC plans during the period starting September 30, 2019 and ending on October 14, 2019. Upon the closing of the enrollment period, the Retirement Board intends to transfer the balances of both Temporary Trusts into the new DC trust holding the individual DC accounts.

2.8 Lack of cost-of-living adjustments ("COLA's")

Most retirees have not received COLA's since 2007. Based on actuarial assumptions and methodologies, a pensioner could reasonably be expected to live roughly 30 years post-retirement. Therefore, without a COLA, pensioner that retired in 2007 has effectively seen a 19% reduction in purchasing power through 2019. By 2037 (30 years after retirement), retirees will have experienced a cumulative 39% reduction in purchasing power (as seen in *Exhibit 6*). Therefore, the lack of COLAs can effectively be viewed as another form of pension benefit reductions.

¹⁹ On July 1, 2019, CBIZ, Inc. (NYSE: CBIZ) had acquired substantially all the assets of Gavion, LLC.

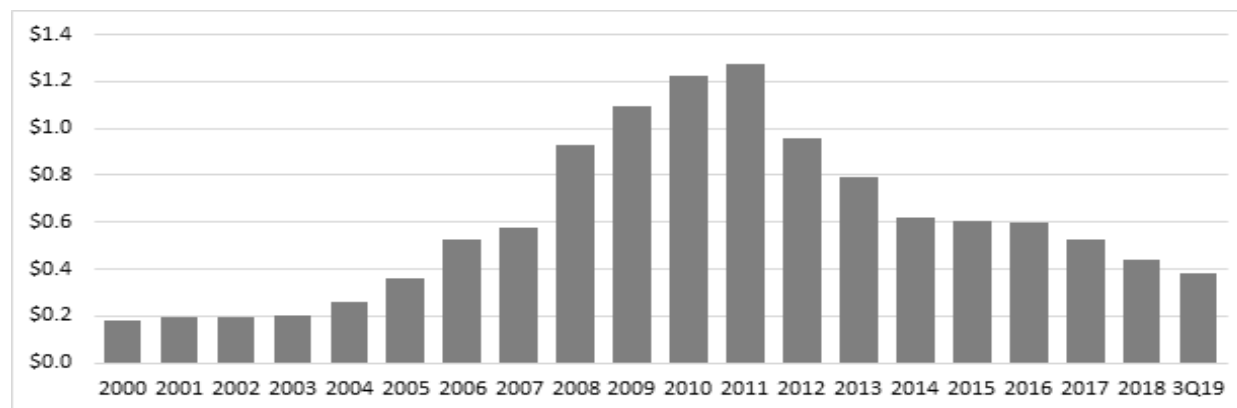
EXHIBIT 6: PURCHASING POWER OF \$100 (FY 2007 - FY 2037)

Note: Inflation from 2019 to 2037 corresponds to forecasted inflation in the certified Fiscal Plan.

2.9 Participant loans

In 1956, Luis Muñoz Marín, Puerto Rico's first elected governor, enacted a law that instituted cultural excursion loans for pensioners. Puerto Rico was in "a stage of rapid social, economic and political development," the law said, and should aim to enable "the largest possible number of Puerto Ricans to travel to foreign countries." Since then, participants in the Retirement Systems could take loans out against the balance of their accumulated member contributions to the Retirement Systems. While some loans issued were for longer term mortgages, the majority were for personal and cultural loans.

Historically, the maximum amount that could be loaned to plan members for mortgage loans was \$100,000, and \$5,000 for personal, and cultural trip loans. In 2007, ERS increased the maximum loan balance for personal loans from \$5,000 to \$15,000. This resulted in a significant cash drain to the Retirement Systems. In 2011, this maximum was reduced back to \$5,000. Act 106 suspended the issuance of all future loans under these programs. The loan portfolio peaked in 2011 and has been in liquidation since then, as shown below (*Exhibit 7*).

EXHIBIT 7: ERS LOANS OUTSTANDING FY 2000-3Q19 (\$B)

These loans are assets of the respective plans (which pursuant to Act 106 will be paid into the PayGo account). They are illiquid and subject to the effectiveness of the loan servicing and credit and collections function performed at the Retirement Systems. These loans represent a significant portion of remaining plan assets, as shown below (*Exhibit 8*).

EXHIBIT 8: LOANS AS A PERCENT OF PLAN ASSETS (\$M)

\$ in Millions	ERS ²⁰	TRS ¹⁹	JRS ¹⁹	% of Total
Participant Loans	\$380.0	\$198.5	\$0.4	73.4%
Cash and Equivalents	0.0	129.0	0.0	16.4%
Alternative Investments	78.8	2.2	0.0	10.3%
Total Plan Assets	\$458.8	\$329.7	\$0.4	100.0%

Repayments of loans were required either through payroll deduction, benefit payment deduction (limited to 33% of the gross benefit), or compulsory increase in employee pension contribution. In the event of the borrower's death before full repayment of their loan, the borrower's survivor pension benefit was at risk of forfeiture. To protect the Retirement Systems and a borrower's survivor benefits, certain loans carried optional or required insurance of up to 0.25% per annum of the loan balance.

In 2013 and 2014 ERS sold loans totaling \$88 million and \$100 million to two financial institutions. These loans were sold at par and ERS earned a 2% servicing fee.

2.10 Access to Social Security

Social Security is mandatory for state and local government employees, unless:

- i) They are members of a qualifying public retirement system, or
- ii) Are covered under a Section 218 Agreement

In Puerto Rico, teachers and judges are currently exempt from Social Security because of the Section 218 agreement between Puerto Rico and the Social Security Administration, which did not cover employees with a qualified alternative FICA retirement plan when Social Security was originally extended to Puerto Rico government employees on July 1, 1952. Teachers and judges are also not eligible for Social Security benefits at retirement unless they have 10 years of previous employment in a position with another employer that is covered by Social Security.²¹

The certified Fiscal Plan includes the enrollment of all police in Social Security on July 1, 2019 and the enrollment of teachers and judges under the age of 45 as of January 1, 2020. Presently the Government has not publicly taken steps to make teachers and judges eligible for Social Security.

Until recently, police officers participating in ERS also have not contributed to Social Security. On July 19, 2019, however, then-Governor Rosselló signed into law Act 71 of 2019 which reduced the mandatory employee retirement contribution for police officers from 8.5% to 2.3%. The passage of Act 71-2019 disqualified police officers from having a qualified FICA replacement retirement plan under federal law, which was the basis for their ability to be excluded from making Social Security contributions.

The Puerto Rico's Police Commissioner Department has begun a process to register the elections by police officers with less than 10 years until retirement to enroll or not enroll in social security. The PRPD provided notices of registration to 5,284 police officers, of which 4,005 opted in, 342 opted out, and 937 did not respond. Final determinations on enrollment for this population are still being processed.

²⁰ ERS Quarterly Asset Report as of 3/31/2019; TRS Quarterly Asset Report as of 6/30/2019; JRS Quarterly Asset Report as of 6/30/2019

²¹ Employees must earn 40 credits, earned at the rate of \$1,360 of earnings per credit up to a maximum of four credits per year. Conventionally, this has equated to 10 years of social security taxes paid. "2019 Retirement Benefits", Social Security Administration, Publication 05-10035, <https://www.ssa.gov/pubs/EN-05-10035.pdf>

Consequently, unless a police officer receives an exemption, going forward, all police officers will be required to start contributing to Social Security. After 10 years of contributions, those police officers will be entitled to Social Security benefits in accordance with federal law.

In addition to the employee contribution to Social Security, employers are also required to contribute 6.2% of an employee's pay. The certified budget for fiscal year 2020 includes an appropriation to cover the employer contribution for Social Security for police officers effective July 1, 2019 and for TRS and JRS active members effective January 1, 2020. This amount equates to \$46.7 million in FY 2020, which includes \$13.1 million for TRS and JRS and \$33.6 million for police.

Separately, the Government recently enacted a law, Act 74-2019, that allows police officers to request an extension of the mandatory retirement age from 58 to 62 for police officers with 30 years of service. One result of this law is that police officers could have additional quarters of employment in which to contribute towards Social Security if a delay in retirement is approved.

Section Three: Historical funding strategy and 30-actuarial projection

3.1 Historical funding practices

All public retirement systems and the state and local governments that sponsor them are encouraged by the PPCC to meet certain minimum standards for public retirement system management, administration, and funding. The funding standards are to meet one or more of the following criteria:

- ▶ A funded ratio of 100 percent;
- ▶ Contribution rates are equal to or greater than 100 percent of the actuarially determined contribution (ADC) (and referred to in other contexts as the Actuarially Required Contribution (ARC)); or
- ▶ A plan has been approved by the governing body to achieve one or both of these criteria within 5 years.

These standards have not been met in the case of the Retirement Systems. As a result, over the years the funded positions of the plans have continued to decrease.

A summary of the funded position of the Retirement Systems, based on the most recent information disclosed for a given year and the assumptions and methods selected by the system actuary at the time, is contained on the pages that follow.

Actuarial Standards of Practice describe a recommended annual employer contribution to the fund on a reasonable actuarial basis which, if paid, results in fully funding the plan. Continually making the employer contributions calculated by the actuary puts the plans on a trajectory to achieve full funding on a consistent basis. To be fully (or 100%) funded means that if all actuarial assumptions are met, assets are on target to meet the pension obligations based on the actuarial funding policy. However, the ARC was not contributed for the Commonwealth plans.

Funding for ERS, TRS and JRS was primarily driven by statutory requirements, which consisted of a combination of contributions from members and employers of the systems. These contributions were largely structured as a percentage of payroll that were scheduled to increase in future years after passage of Act 3-2013 (ERS), Act 160-2013 (TRS), and Act 162-2013 (JRS). In fiscal year 2017, by statute payroll employer-based contributions were supposed to be 15.525%, 14.75%, and 30.34% for ERS, TRS, and JRS respectively. These baseline funding requirements were generally met historically by the sponsoring employers.

But, as early as 2007, the system actuaries had expressed their views that statutory contribution requirements were not sufficient to meet future plan needs. For example, page 6 of the June 30, 2007 ERS actuarial valuation report indicates:

"Based on the current statutory member and employer funding requirements, the UAAL [Unfunded Actuarial Accrued Liability] is expected to grow indefinitely into the future instead of being amortized. Effectively, this means that the statutory member and employer contributions to PRGERS are not adequate to fund PRGERS' Basic System Benefits. Instead, PRGERS is being disfunded. As a result, the future scheduled contributions equal to the statutory funding requirement will not be adequate to accumulate sufficient assets to make future benefit payments when due."

Page 8 of the same report states:

"We recommend that the statutory funding requirements be significantly increased in excess of the recent employer contribution rate increase to 9.725% in light of:

- ▶ *The expected net negative cash flows;*
- ▶ *The forecast decrease in funded status;*
- ▶ *The Annual Required Contribution based on GASB 25 and 27."*

Similar recommendations were included in subsequent years, including the 2009 valuation report which provided a recommendation considering *"The expected negative net cash flows which are expected to exhaust net System assets in 2014 (assuming the investment return of assumption of 7.5% is met)"*.

Over time, legislation was enacted to increase funding levels. However, this legislation did not increase the statutory funding requirements to equal the actuarial annual required contribution and therefore did not prevent the continued depletion of plan assets. Further, these additional funding requirements were not always met, as shown in later exhibits.

During the 2010-2011 fiscal year, Act 116-2011 was enacted, which increased employer contributions from 9.275% of compensation to 10.275% of compensation effective July 1, 2011. For the next four fiscal years, required employer contributions would then increase annually by 1% of compensation. For the next four fiscal years, required employer contributions would increase annually by 1.25% of compensation, reaching an ultimate employer contribution rate of 20.525% effective July 1, 2020 (Article 2-116 as amended by Act 11 of 2011 and Act 3 of 2013).

Effective July 1, 2013, the system assets were to receive a supplemental contribution of \$2,000 for the payment of special benefits from employers each fiscal year for each pensioner (including survivors receiving benefits) who was previously benefitting as an Act 447 or Act 1 member while an active employee. This supplemental contribution was to be paid by the General Fund for former government employees or by the public corporation or municipality for their former employees (Act 3 of 2013).

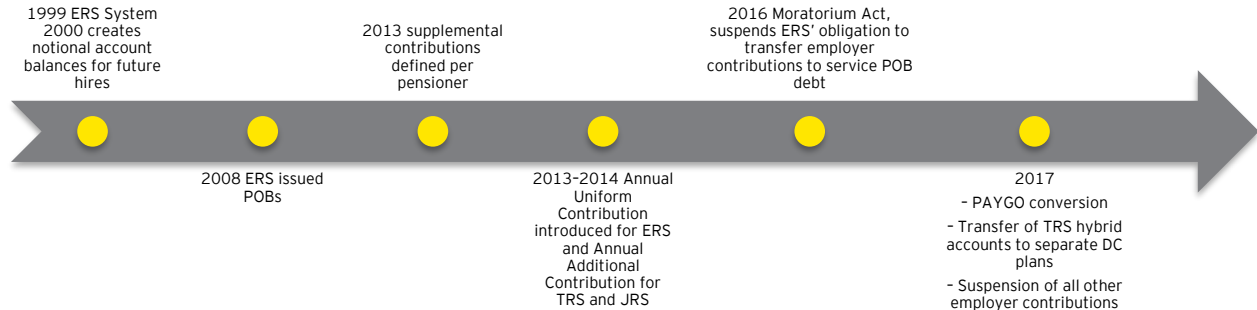
Similarly, the Act 160-2013 introduced supplemental contributions for TRS of \$1,675 for the payment of special benefits per pensioner (including survivors) retired before August 1, 2014. Any excess of supplemental contributions over the System Administered benefits were to remain in the system to help pay down the unfunded liability.

Significant pension funding changes were implemented in 2013. In addition to amending benefits, this legislation set up an "Additional Uniform Contribution" (AUC) for ERS, beginning at \$120 million and annually determined by the actuary as the amount necessary to prevent the fund assets from falling below \$1.0 billion. Preliminary calculations showed this AUC would grow to nearly \$600 million per year. However, this necessary, supplemental funding was never fully implemented. Most employers failed to pay the AUC. As of June 30, 2016, there were \$180M in past due and immediately payable Additional Uniform Contributions to be made by selected employers. Act 106 rescinded the requirement for the AUC to be paid into the insolvent ERS trust since the construct of a prefunded plan was no longer viable given the complete depletion of plan assets.

A similar approach was taken for TRS ("Annual Additional Contribution") based on \$300 million floor and JRS (\$20 million floor). For JRS, as of June 30, 2017, the past due payment owed on behalf of unpaid contributions was \$23.7M. These supplemental contribution calculations for TRS were to begin prior to the beginning of the 2018-2019 fiscal year but were eliminated in conjunction with the conversion to PayGo.

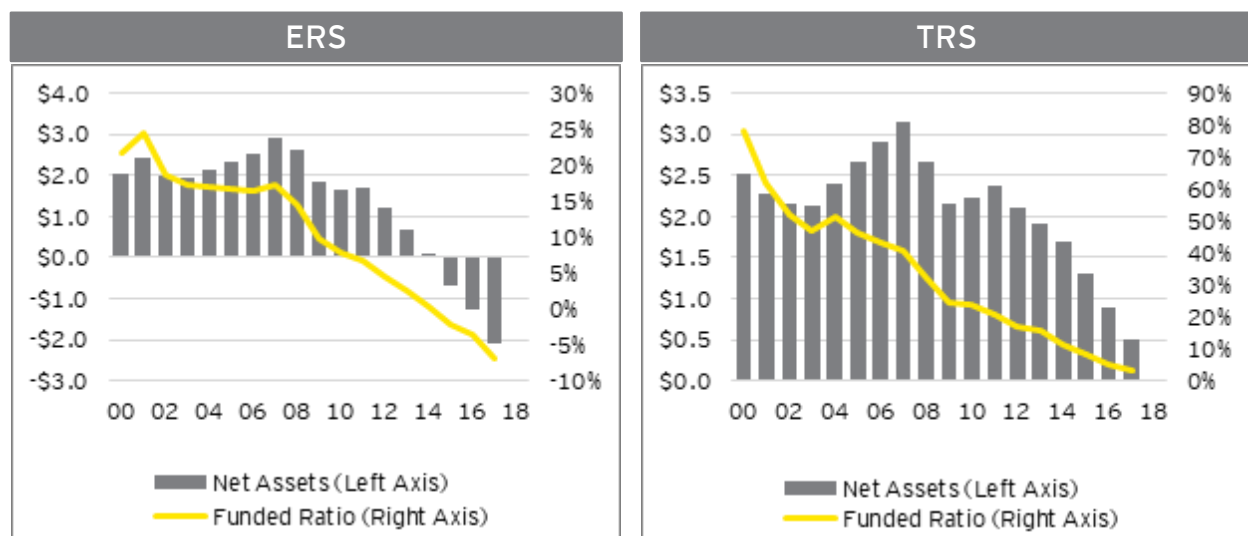
Below is a summary timeline that outlines the key funding events in the history of the Retirement Systems (**Exhibit 9**). A more extensive timeline of events affecting ERS and TRS is in Appendix G.

EXHIBIT 9: TIMELINE OF KEY FUNDING EVENTS

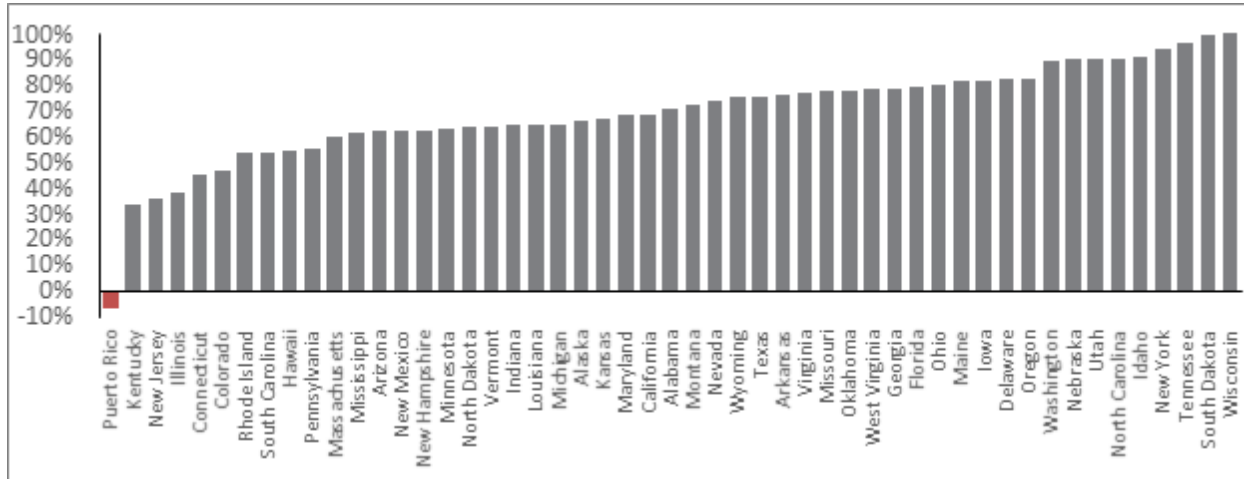


The actual employer contributions and employee contributions falling short of the ARC for each plan was a factor in the rapid depletion of the pension assets that left the Retirement Systems materially underfunded. ERS and TRS funded status since FY 2000 is shown below (**Exhibit 10**).

EXHIBIT 10: ERS AND TRS NET ASSET BALANCE (\$M) AND FUNDED RATIO (\$B)



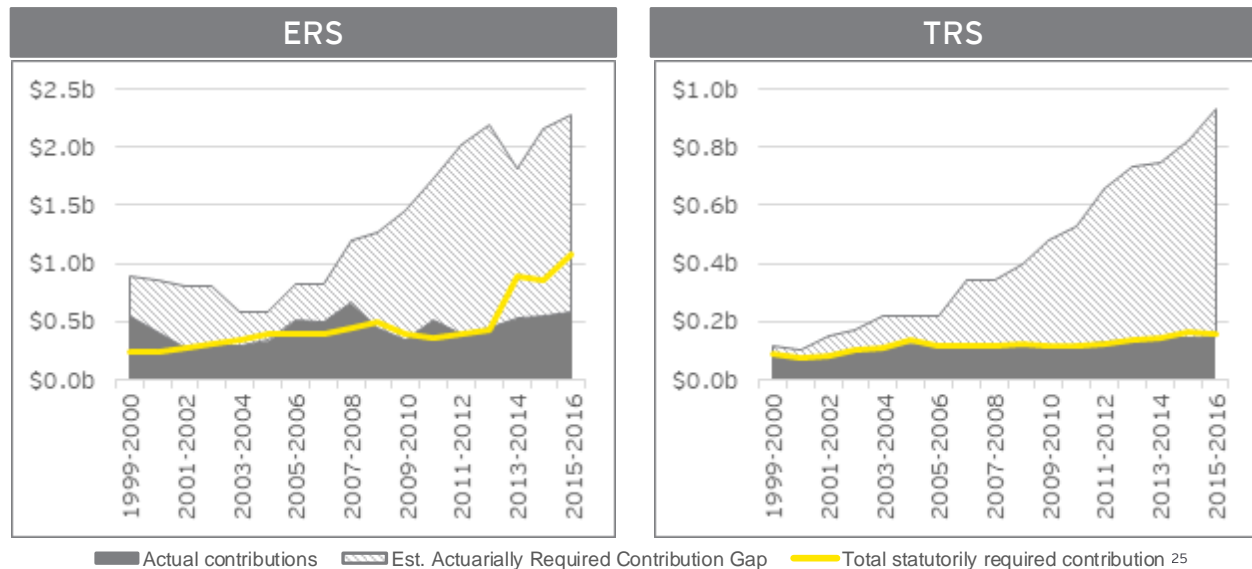
The Pew Charitable Trusts analyzed the state pension funding gap for fiscal year 2017, the most recent year for which comprehensive data were available for all 50 states. Pew's analysis concluded that many state retirement systems are on an unsustainable course, coming up short on their investment targets and having failed to set aside enough money to fund the pension promises made to public employees. Even as contributions from taxpayers over the past decade doubled as a share of state revenue, the total still fell short of what is needed to improve the funding situation. When the Retirement Systems are compared to other state retirement systems, it shows how poorly funded the Retirement Systems truly are. As shown below, the Retirement Systems, rank far below Kentucky, which in 2017 had the lowest funded ratio of any of the 50 states (**Exhibit 11**).

EXHIBIT 11: STATE PENSION FUNDED RATIO COMPARISON BY STATE²²**3.2 Historical employer contributions**

Historically, the actuarial annual required contribution was greater than both the statutorily required contributions and the actual employer contributions made. While various steps were taken to improve the funded status of the Retirement Systems over time, none of the best practice recommendations from the PPCC were implemented. The financial and operational shortfalls directly led to the depletion of the fund assets to a point where following an ARC schedule was not a viable model.

Summaries of the historical statutorily required amounts, actuarial annual required contribution and actual contributions made, based on information either explicitly identified in the annual actuarial reports, or extrapolated from headcounts, payroll, and other information included in such reports, are contained below for both ERS and TRS (**Exhibit 12**). The statutorily required amounts include estimated payroll-based contributions, estimated supplemental contributions, early retirement contributions, AUC (for ERS), or AAC (for TRS and JRS). As shown in the exhibit, the increases in statutorily required contributions beginning in 2013 still fell short of the actuarial annual required contribution; the actual amounts contributed fell short of the actuarial annual required contribution and fell short of the statutorily required contribution once the AAC and AUC went into effect. The actuarial annual required contribution, actual contributions and statutorily required amounts reflect only the benefits for which the systems are responsible, and therefore exclude the system administered benefits.

²² Source: "The State Pension Funding Gap: 2017". June 27, 2019. Pew Charitable Trust.

EXHIBIT 12: HISTORICAL COMPARISON OF ERS AND TRS ACTUAL CONTRIBUTION VS. ACTUARIAL REQUIRED CONTRIBUTION AND STATUTORILY REQUIRED CONTRIBUTION (\$B) ^{23, 24}

3.3 Pension obligation bonds

On February 27, 2007, ERS's administration and the Government Development Bank, acting as ERS's fiscal agent, presented to the ERS Board of Trustees a financial transaction for the issuance of pension funding bonds. ERS authorized the issuance of one or more series of bonds (the "Bonds") to increase the funds available to pay pension benefits and to reduce the unfunded accrued actuarial pension liability.

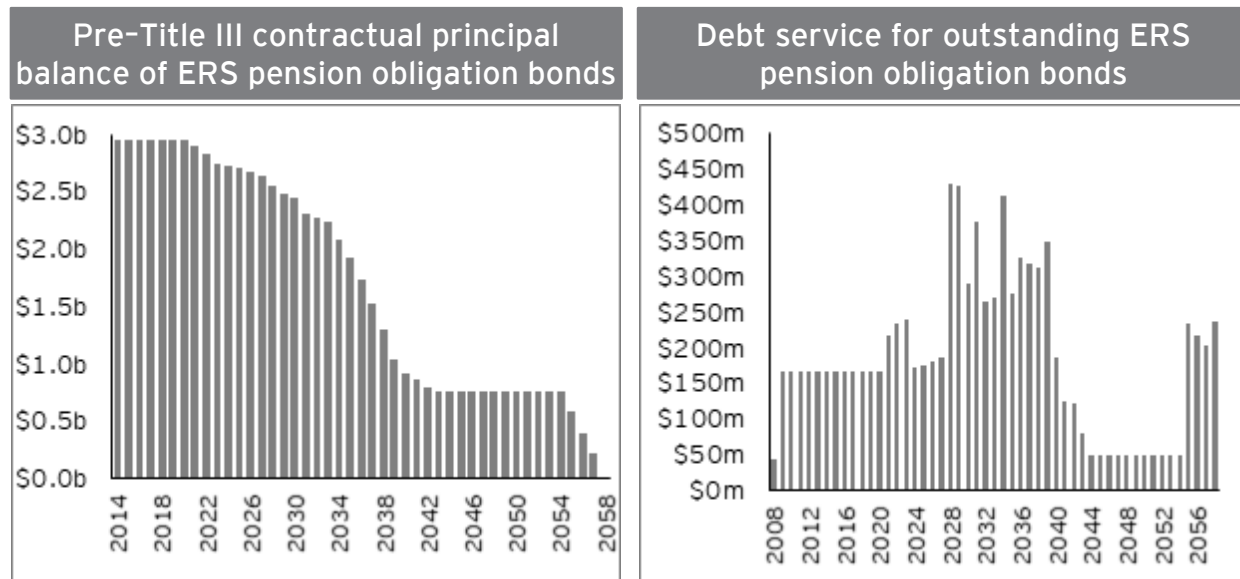
On January 31, 2008, the System issued the first series of the Bonds, which consisted of approximately \$1,589 million aggregate principal amount of Senior Pension Funding Bonds, Series A. On June 2, 2008, the System issued the second of such series of Bonds, which consisted of approximately \$1,059 million aggregate principal amount of Senior Pension Funding Bonds, Series B. Finally, on June 30, 2008, the System issued the third and final of such series of Bonds, which consisted of approximately \$300 million aggregate principal amount of Senior Pension Funding Bonds, Series C.

Based on information from the Board's advisors, the Bonds are limited, non-recourse obligations of the System payable solely from and secured solely by a pledge of employer contributions made after the bonds' issuance date. The Bonds are not payable from the investments of ERS, or from employee contributions to ERS. The bonds' repayment schedule is shown below (*Exhibit 13*).

²³ Excludes Medical Insurance Plan Contribution amounts

²⁴ In 2015 the systems began reporting under GASB 67, which did not require calculations of the ARC if the statutory contributions are not based on the ARC. Thus, the system actuaries no longer computed the ARC for the pension benefits. ARCs after 2014 have been estimated based on the Total Pension Liability, Fiduciary Net Position and Service Costs disclosed in the GASB 67 valuation reports. 1999-2014 ARC provided by Milliman.

²⁵ Total statutorily required contribution includes estimated payroll-based contributions, estimated supplemental contributions, early retirement contributions, and AAC (for TRS) or AUC (for ERS)

EXHIBIT 13: ERS PENSION OBLIGATION BONDS DEBT AND PRE-TITLE III SERVICE^{26, 27}

After the issuance of the POB's, ERS maintained a significant portion of its plan assets in cash investments, rather than investing the bond proceeds in higher-yielding investments. A comparison of the portion of plan assets in cash versus the liquidity needs of the plan is outlined below (**Exhibit 14**). For the various reasons noted above, plan assets were reduced to be a small fraction of plan liabilities. In recent years, plan assets were less than the amount of remaining POB debt.

EXHIBIT 14 COMPARISON OF ERS CASH INVESTMENTS TO PLAN CASH FLOW NEEDS (\$B)

	June 30, 2009	June 30, 2010	June 30, 2011
Cash (A)	\$1.30	\$1.1	\$1.0
Plan assets (exclusive of POB liability)	3.9	4.6	4.7
Plan expenditures (benefit payments, expenses and debt service) (B)	(1.3)	(1.5)	(1.7)
Employer and Member Contributions (C)	0.8	0.9	1.0
Net cash flow need (D = B + C)	(0.5)	(0.6)	(0.7)
Cash available in excess of net cash flow need (A + D)	0.8	\$0.5	\$0.3

²⁶ Source: Official Statement for the offering of Series C pension funding bonds dated June 26, 2008.

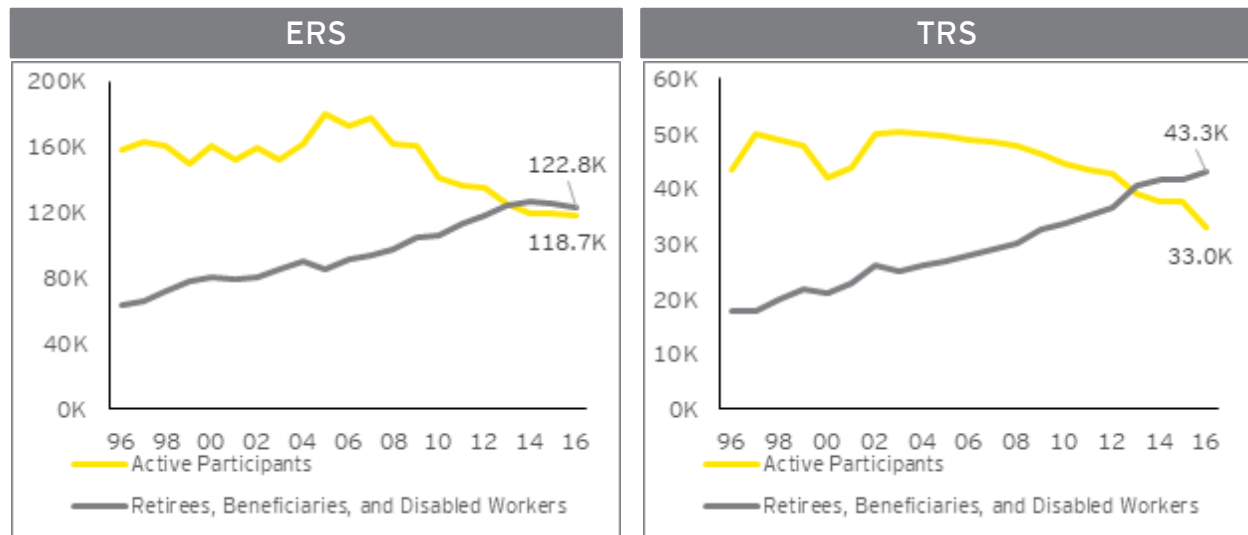
²⁷ The principal shown above includes the initial principle balance on the capital appreciation bonds issued by ERS. The CABs were designed to accrete until their redemption, the value of which is not shown in the table.

3.4 Changing Plan Demographics

A pension plan that pays benefits to retirees in the form of an annuity becomes increasingly mature the longer that it is in existence. In other words, the ratio of pensioners to active participants increases over time. The more a plan matures, the less active participant contributions will help defray the cost of the plan, particularly when a plan experiences is adverse (e.g. investment losses) and losses must be made up through future contributions. This dynamic is exaggerated when pensioners live longer due to mortality improvements.

A comparison of progression of the ratio of number of pensioners to active participants in each plan based on historical actuarial valuation reports is contained below (*Exhibit 15*).

EXHIBIT 15: ACTIVE PARTICIPANTS COMPARED TO RETIREES, SURVIVORS, AND DISABLED WORKERS IN THE VARIOUS PENSION SYSTEMS (# IN 000'S OF PARTICIPANTS)



As seen above, there has been a significant reduction in active participants over the past few years, partially due to legislation enabling more favorable early-retirement but also due to an island-wide decline in working age population. Retirees, survivors, and disabled workers now outnumber active participants. Because of a population with a high concentration of retirees, the relative cost of funding these plans remain high with respect to overall payroll. The inability to restore assets being used for benefit payments for retirees via contributions translates to the downward trajectory in funded position.

Additional information related to the distribution of benefits for current pensioners by age and benefit amount is contained in Appendix E.

3.5 Projected future plan costs

Under a PayGo system, the year by year projected payments represent the projected future funding costs of the system. The system actuary for ERS, TRS and JRS, performs annual actuarial valuations which estimates the future benefit payments to participants based on their life expectancy and current demographic information. These projections utilize census data to project future benefits payable from each system. The projections reflect the benefit provisions for each plan and assumptions for future demographic experience, such as length of employment and future mortality rates.

The projections based on the most recently available census data were provided to the Oversight Board, along with the underlying census data. The Oversight Board's actuaries utilized the census data, along with the plan provisions and assumptions described in the actuarial valuation reports, to perform an independent projection of the benefits payable under each system ("Board Projections"). The Board Projections include all of TRS and JRS and only costs for the participating employers of ERS.

The Board Projections reproduced the projections of the System actuaries, including the assumptions utilized by the system actuary to compensate for data gaps outlined in Section 1.2, within a reasonable actuarial tolerance that accounts for differences in actuarial models.

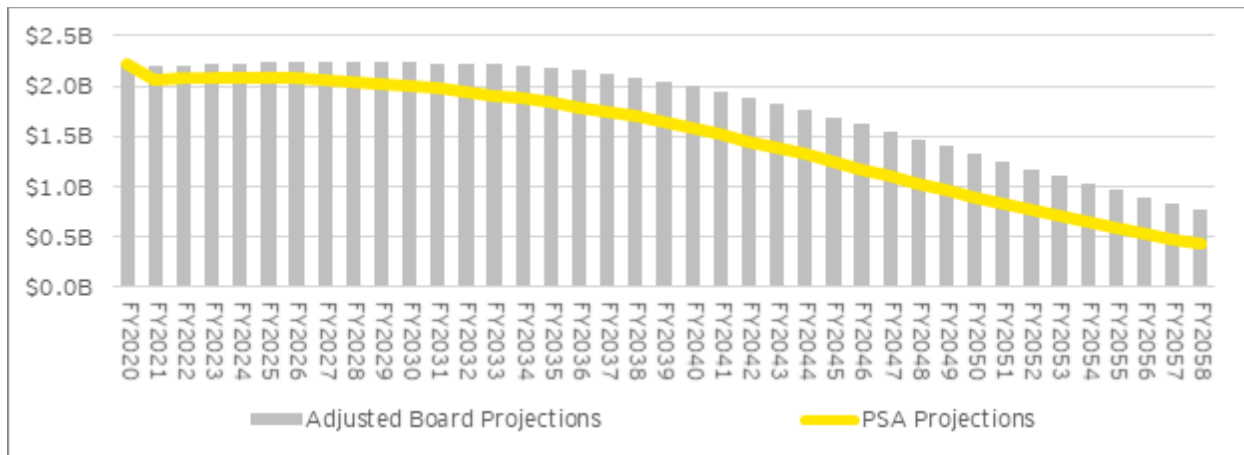
The certified Fiscal Plan reflects various measures designed to reduce pension costs through freezes and cuts to future benefit amounts. Since the publication of the certified Fiscal Plan, the Oversight Board has entered into agreements with the Official Committee of Retirees ("COR") and AFSCME. A comparison of the pension measures initially reflected in the May 9, 2019 fiscal plan with the key provisions entered into under the agreements are shown below (*Exhibit 16*).

EXHIBIT 16: COMPARISON OF MAY 9, 2019 FISCAL PLAN PENSION MEASURES WITH RECENT PLAN SUPPORT AGREEMENTS ("PSA")

	May 9, 2019 fiscal plan	Plan Support Agreement
COR	Pension cut applicable to benefits earned prior to May 4, 2017 equal to 25% of the excess of the monthly pension over \$600/month (\$1,000/month for members that did not have access to Social Security while they accrued their monthly pension).	8.5% pension cut to total benefit, subject to \$1,200 floor.
AFSCME	All benefits earned through May 4, 2017 are subject to cut provisions, including benefits related to ERS hybrid accounts.	Employee contributions for full System 2000 participants as well as full Act 3 participants hired after July 1, 2013 will be transferred to DC accounts and not be subject to cuts. Benefits associated with post-July 1, 2013 employee contributions for Act 447 and Act 1 participants will remain within the PayGo system but will not be subject to cut.

In accordance with the AFSCME PSA, the Board Projections were further adjusted to exclude projected benefits payable to System 2000 and Act 3 participants ("Adjusted Board Projections"). The exhibit below shows the benefit payout projections for the Retirement Systems under the Adjusted Board Projections. The Adjusted Board Projections reflect projected pension expenditures without the implementation of the PSA's, other than the removal of full System 2000 and Act 3 related participants per the AFSCME PSA. The post-PSA projections ("PSA Projections") reflect the freeze for TRS and JRS, and in place of the cut provisions originally reflected in the May 9, 2019 fiscal plan, reflects the terms of the PSA's described above²⁸ (*Exhibit 17*). The effect of freezing the defined benefits under the TRS plan is the greatest driver of reductions from the Adjusted Board Projections to the PSA Projections.

²⁸ Agreement is still subject to a consenting vote from the affected retirees.

EXHIBIT 17: ADJUSTED BOARD PROJECTIONS COMPARED TO PSA PROJECTIONS (\$B)**3.6 Present value of future plan costs**

GASB 68 and 45 provide guidance for the valuation of public plan liabilities. Under these standards, the discount rate is prescribed to be:

- ▶ Selected based on long term expected rates of return for trust assets prior to the expected date of depletion of assets, and
- ▶ Selected based on prevailing municipal bond rates after the depletion date.

Since the plans are being funded on a PayGo basis, this would result in a GASB discount rate based on municipal bond rates as of the valuation date. While the calculations under Section 211 are not beholden to these standards, they provide general guidance based on industry standards.

The present value as of July 1, 2019 of the PayGo costs from FY 2020 to FY 2058 using on a discount rate of 3.50% based on municipal bond rates is shown below (**Exhibit 18**). 3.50% is based on the Bond Buyer 20-bond Municipal Bond Index as of June 30, 2019, which coincides with the date to which the payments were discounted and the methodology utilized for historic selection of GASB interest rates.

EXHIBIT 18: PRESENT VALUE (PV) OF PAYGO COSTS FROM FY 2020 TO FY 2058 (\$B) AT 3.50%

Retirement System	ERS	TRS	JRS
PV of baseline PayGo costs	\$23.0	\$18.4	\$0.8
PV of PayGo costs with freeze	23.0	14.6	0.5
PV of PayGo costs with freeze and cut	21.8	13.7	0.5
Census date	July 1, 2016	July 1, 2016	July 1, 2015
Date of receipt of census data	October 29, 2018	April 5, 2019	June 21, 2018

PROMESA requires that the Oversight Board select a discount rate to measure the fair market value of the pension plans' obligation. The Oversight Board has communicated²⁹ that its position is that the promised pension payments represent an obligation that is relatively certain to be paid by the

²⁹ Discussions with the Oversight Board on September 25, 2019

Commonwealth and that the risk premium should appropriately reflect that certainty. As such, the board has selected to utilize the June 2019 US Treasury Nominal-Coupon-Issue (TNC) Yield Curve³⁰ to measure the fair market value of the projected PayGo costs. This view is consistent with a Society of Actuaries' Report of the Blue Ribbon Panel on Public Pension Funding (the "Panel") in which the Panel indicated that they believe that the rate of return assumption should be primarily based on the current risk-free rate (e.g. the US Treasury yield curve) plus explicit risk premia or on other similar forward-looking techniques.

Based on the discounting assumption selected by the Oversight Board, the fair market value as of July 1, 2019 of the PayGo costs from FY 2020 to FY 2058 was calculated by discounting the PayGo costs projected for a given year with the monthly average spot rate of the TNC Yield Curve. The resulting fair market value of the plans after reflecting the projected freezes and cuts were \$25.0B, \$15.7B, and \$0.6B for ERS, TRS, and JRS respectively.

The use of a yield curve is a common practice in the discounting of projected pension cash flows. A single weighted average discount rate can be determined to represent the single equivalent rate which produces the same present value as the entire yield curve. Because the spot rates of a yield curve vary by duration, the weighted average discount rate produced by a given yield curve will vary depending on the duration of the cash flows being discounted. The weighted average discount rate for the aggregate fair market value of PayGo costs with freeze and cut is 2.41%.

Changes to the discount rate assumption will impact the present value of future plan costs. However, changes to the discount rate assumption will not impact the PayGo costs depicted in Exhibit 17 since these were developed on a nominal basis.

3.7 Risks to PayGo arrangement

While PayGo funding provides a mechanism to pay benefits free of the limitations ordinarily imposed by a prefunded trust by allowing governmental entities to only have to pay the portion of retiree benefits as they come due (thereby providing a degree of budgetary relief), it is subject to several additional risk factors including:

- ▶ Variability in costs may result in actual costs different from those amounts budgeted and mechanisms will need to be in place to cover those deficits. Whether the Commonwealth is in a surplus or deficit will impact its ability to do so.
- ▶ Significant deviations in cost are potentially unpredictable and calculating the impact of these events may not be feasible.
- ▶ Entities may dissolve or become insolvent prior to their ability to pay their obligation and those payments become the general responsibility of the Treasury.
- ▶ Costs are potentially higher in the long run under a PayGo approach than under a prefunded approach under which funded assets appreciate and accumulate investment earnings.
- ▶ The term of the pension is longer in duration than the typical budgeting processes.
- ▶ The time lag between recent employee elections for early retirement and the calculation of actuarial projections means that reimbursements from participating employers may be understated.

³⁰ 2019 Treasury Nominal Yield curve <https://www.treasury.gov/resource-center/economic-policy/corp-bond-yield/pages/TNC-YC.aspx> (Nominal TNC Data)

Section Four: Future funding sources and sustainability

4.1 Fiscal plan surplus

As described earlier, Act 106 established PayGo as mechanism to pay pension benefits. Under PayGo, a portion of annual benefits paid out to plan participants become a General Fund expenditure in future years that is budgeted for as part of the operating cost of the Commonwealth. The remaining portion is budgeted as a special revenue fund predicated on the full payment of PayGo charges by public corporations and municipalities that are ERS employers. Act 106 further confirmed the elimination of payroll-based contributions, supplemental employer contributions, the ERS AUC, and the AAC for both TRS and JRS.

The Oversight Board's certified Fiscal Plan outlines the baseline revenues and expenditures of the Commonwealth (including the effect of any projected fiscal measures) and identifies projected surpluses / deficits over a 30-year period. The Commonwealth is projected to be in a surplus position through FY 2037. After that time, the operating expenses are projected to exceed revenues through the remainder of the projection period.

The chart below outlines the total projected surplus through FY 2038 (the first year in which operational deficits are observed), as well as the future deficits over the following 10-year period (*Exhibit 19*).

EXHIBIT 19: PROJECTED COMMONWEALTH OPERATIONAL REVENUES, EXPENSES AND NET SURPLUS / (DEFICITS) (\$M)

Fiscal Years	Revenues	Pension Expense	Pension Measures ³¹	Total Expenses	Surplus / (Deficit)
2018 - 2037	\$445,799	(\$46,520)	\$3,785	(\$417,325)	\$28,474
2038 - 2049	\$312,447	(\$23,237)	\$3,550	(\$318,752)	(\$6,305)

Future deficits could impact the ability of the Commonwealth to meet the forecasted pension payments. Further discussion of the sustainability of this funding strategy is discussed in Section 3 of this Report.

The government will be required to take additional steps to achieve budgetary balance in the subsequent years, many of which have already been outlined by the Oversight Board, but to which there has been no government commitment to date. These incremental measures are meant to increase the Commonwealth's competitiveness, improve its economy, and produce surpluses beyond FY 2037.

While the Fiscal Plan projects a surplus through FY 2037, several variables have a material impact on this long-term financial projection. For example, lower growth generated by structural reforms and demographic shifts not yet seen may impact revenues and expenditures and could reduce surpluses and therefore the funding for benefits payable under PayGo.

Benefits payable under the PayGo system constitute a large, though falling, portion of the projected future operating expenses. The cost of pension benefits will increase from approximately 11.2% of total Commonwealth operating expenses in FY 2018 to 12% of total operating expenses in FY 2022 before gradually declining. The short-term increase in expense is attributable to the continued retirements of participants in defined benefit plans.

³¹ Reflects pension measures based on May 9, 2019 fiscal plan.

Considering only those benefits accruing through January 1, 2020 by freezing TRS and JRS, reduces the short-term increase in pension costs post FY 2020, and decreases the tail of the retirement obligation. This has the effect of reducing pension costs by an increasing margin over the projection period. The Fiscal Plan includes a freeze on these accruals (including closure of JRS to new entrants effective January 1, 2020) and a cut on benefits previously earned and is already reflected in the projected deficits shown below (*Exhibit 20* and *Exhibit 21*).

EXHIBIT 20: PROJECTED PENSION COSTS AS A % OF TOTAL FISCAL PLAN EXPENSES (\$B)

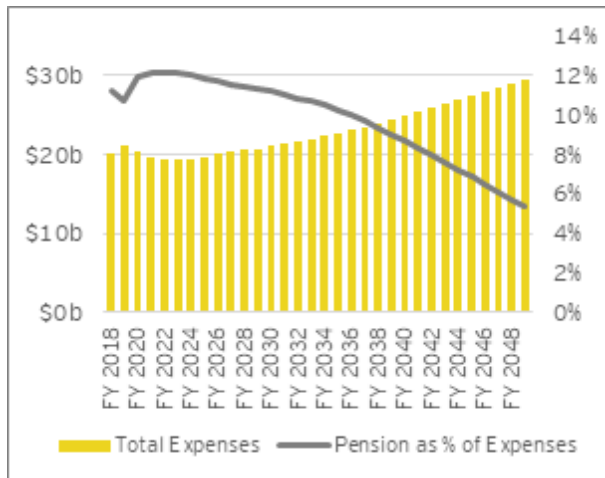
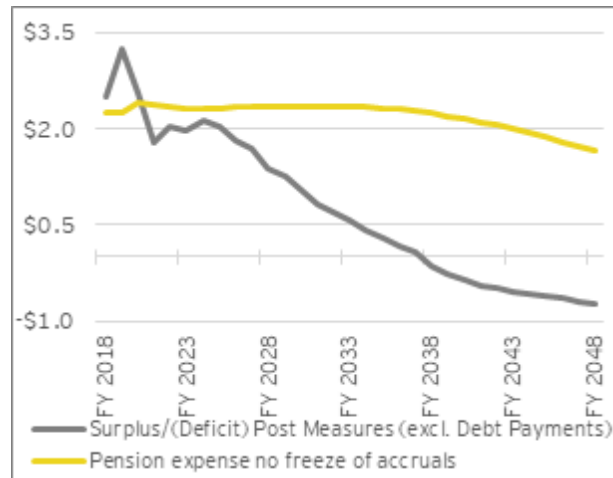


EXHIBIT 21: PROJECTED PENSION EXPENSE & COMMONWEALTH SURPLUS / (DEFICIT) (\$B)



As seen in the above, the projected cost of the retirement plans continues to exceed \$2B in FY 2038 when the first operational deficits are expected. To be able to make future payments, it will be necessary for the Commonwealth to find ways to manage the projected deficits and either identify opportunities to grow revenue, reduce anticipated expenses, or leverage the existing surplus to reduce the effect of future deficits. Note that various pension measures including a freeze of TRS / JRS benefits and a benefit cut are already factored into the fiscal plan projections.

4.2 Pension reserve fund

In addition to the terms under the COR agreement describing a cut to accrued benefits, the Agreement includes provisions for the establishment of a pension reserve fund that will be funded through the projected fiscal surplus to be used to provide additional funding for PayGo. The pension reserve fund is described as follows:

- ▶ On the effective date of a confirmed Plan of Adjustment (POA) for the Commonwealth, the Commonwealth will establish a Pension Reserve Fund that will be held in a trust for the sole benefit of beneficiaries of PayGo.
- ▶ The Commonwealth shall make annual contributions to the Pension Reserve Fund from the Commonwealth General Fund until FY 2027 in an amount no less than \$175 million per year. If the projected Fiscal Plan Surplus is at least \$1.750 billion in any year, then 25% of that amount will be contributed to the Pension Reserve Fund instead of the foregoing \$175 million. The annual contribution shall be made by October 1 following the end of each fiscal year.

- ▶ The Commonwealth shall make a one-time \$5 million contribution on the effective date to cover the Pension Reserve Board's upfront administrative fees, costs, and expenses.
- ▶ Withdrawals from the Pension Reserve Fund, including investment returns, will be made in amounts to be determined by the Pension Reserve Board, in consultation with the Commonwealth, to reduce the Commonwealth cash outlays from the General Fund for annual PayGo expense for Retirees in years in which there is projected to be a budget deficit. Withdrawals from the Pension Reserve Fund will require approval of the Pension Reserve Board and shall only be used by the Commonwealth for the payment of PayGo.

These provisions were negotiated with the PayGo costs reflecting a freeze and cut as contemplated by the amounts included in the current Fiscal Plan. Changes to such costs as well as changes to the projected surplus would impact the ability of this pension reserve fund to be sufficient to meet future PayGo costs.

4.3 Assessment of sustainability

The current level of projected deficits includes an assumption that the PayGo liability associated with all employers, including non-fiscal plan entities, is 100% paid by those employers. This includes reimbursements collected from the public corporations and municipalities for PayGo related expenses. As discussed earlier, however, there is currently an accumulated shortfall in pension PayGo payments from municipalities and public corporations in excess of \$264M through June 30, 2019.

The pension PayGo projections are also subject to risk associated to actual behavior / economics being different from those assumed when making the projections. The certified Fiscal Plan projections include estimates of future pension costs based on assumed employee demographics including, but not limited to, turnover, retirements, and mortality. These behaviors also may be linked to other economic assumptions that impact Puerto Rico's economy and population. To the extent that actual experience is different than those expected, the actual costs will deviate from these estimates.

The sustainability of the current pension system under PayGo is also contingent on overall management and planning for future projected deficits. The future projected costs for the plan far exceed the period of time in which projected revenues are sufficient to cover expenses. Unknown factors, such as the impact of voluntary transition programs, which are not reflected in the current PayGo estimates calculated by the system actuaries, will also impact the accuracy of current budget projections.

Appendix A: Sources

Actuarial valuation reports

Actuarial valuation reports as of fiscal year end dates through June 30, 2016, produced by the system actuaries were referenced for historical information such as Annual Retirement Contributions, plan provisions, actual contribution amounts and demographic data.

Actuarial valuation reports may be accessed here:

ERS and JRS: <https://www.retiro.pr.gov/estados-financieros/>

TRS: <https://www.srm.pr.gov/Paginas/InformacionGeneral/EstadosFinancieros.aspx>

Actuarial reports were not produced in all years. Where information is not available, N/A is listed.

Certified fiscal plan

The most recent fiscal plan certified by the Oversight Board as of May 9, 2019 was referenced for future projections such as PayGo costs and future Commonwealth surpluses and deficits.

The fiscal plan can be found at the following URL:

<https://drive.google.com/file/d/13wuVnO4--JKMEPKu-u-djZJHqTK-55aV/view>

Selected other sources

► Legislation as referenced in the body of this Report:

- | | |
|---|----------------------------|
| ○ Puerto Rico Oversight, Management, and Economic Stability Act | ○ Act 218 of 1951 |
| ○ Act 447 of 1951 | ○ Act 160 of 2013 |
| ○ Act 218 of 1951 | ○ Act 12 of 1954 |
| ○ Act 91 of 2004 | ○ Act 162 of 2013 |
| ○ Act 12 of 1954 | ○ Joint Resolution 43-2019 |
| ○ Act 71 of 2019 | ○ Act 127 of 1958 |
| ○ Act 106 of 2017 | ○ System 2000 |
| ○ Act 257 of 2018 | ○ Act 74 of 2019 |
| ○ Act 29 of 2019 | ○ Act 116 of 2011 |
| ○ Act 81 of 2019 | ○ Act 114 of 2011 |
| ○ Act 3 of 2013 | ○ Act 11 of 2011 |
| | ○ Act 162 of 2013 |
| | ○ Act 1 of 1990 |

► Exhibit 10 from Case #17-03283-LTS, Docket #: 5581-10; Filed on :03/12/19. Located here: <https://cases.primeclerk.com/puertorico/Home-DownloadPDF?id1=OTA2MDIx&id2=0>

► “2019 Retirement Benefits”, Social Security Administration, Publication 05-10035, <https://www.ssa.gov/pubs/EN-05-10035.pdf>

► “Actuarial Valuation Report”. June 30, 2016, Puerto Rico Judiciary Retirement System

► “Actuarial Valuation Report”. June 30, 2016, Puerto Rico Teachers Retirement System

- ▶ “Actuarial Valuation Report”. June 30, 2016, Puerto Rico Government Employees Retirement System
- ▶ Puerto Rico Fiscal Agency and Financial Advisory Authority, PayGo and Individual Contribution Debt by Entity, September 15, 2019
- ▶ Plan Support Agreement by and between the Oversight Board as representative of the Commonwealth and the American Federation of State, County and Municipal Employees International Union, AFL-CIO, dated June 7, 2019
- ▶ Plan Support Agreement by and between the Oversight Board as representative of the Commonwealth and Official Committee of Retired Employees of the Commonwealth of Puerto Rico appointed in the Commonwealth’s Title III Case, dated June 7, 2019
- ▶ Official Statement - Pension Obligation Bonds, 2008

Appendix B: Detailed Plan Provisions

An overview of the various benefit provisions applicable to the members of the systems follows:

	ERS		TRS		JRS	
	Hired Jan 1, 2000 or later ³²	Hired before Jan 1, 2000 ¹¹	Hired Aug 1, 2014 or later	Hired before Aug 1, 2014	Hired July 1, 2014 or later	Hired before July 1, 2014
Benefit Structure	Hybrid: Employee contributions and interest, payable as an annuity	Hybrid: Employee contributions and interest after July 2013 <u>Defined Benefit</u> through 7/2013 ³³	Hybrid: Employee contributions and interest, payable as an annuity	<u>Defined Benefit</u>	Hybrid: Employee contributions and interest, payable as an annuity and <u>Defined Benefit</u>	<u>Defined Benefit</u>
Defined Benefit Formula	N/A	1.5% x 5yr Avg Pay x years of service. Enhanced benefits upon attaining 30 years of service.	N/A	1.8% x 3yr Avg Pay x years of service, enhanced with 30 years of service	1.5% x 5yr Avg Pay x years of service	25% x 1yr Avg Pay + 5% per year of service above 10 *75% of pay maximum benefit ³⁴
Frozen	No	DB is, effective July 1, 2013	No	No	No	No
Social Security	Police - 7/2019+ Others - Yes		No	No	No	No
Special Law Benefits	Christmas Bonus (\$200 annually) Medical Bonus (\$100 annually) Medical Insurance Plan Contribution (MIPC \$100 monthly) COLAs (through 2007) Minimum benefits		Christmas Bonus (\$200 annually) Medical Bonus (\$100 annually) MIPC (\$100 monthly) COLAs (through 2007) Minimum benefits		Christmas Bonus (\$600 annually) ³⁵ Summer Bonus (\$100 annually) ³⁵ Medical Bonus (\$100 annually) ³⁵ MIPC (\$100 monthly) COLAs Minimum benefits	

³² Different provisions may apply to Mayors or individuals in high risk positions

³³ Benefits vary for Act 447 participants (pre- April 1, 1990 hires) and Act 1 participants

³⁴ 60% for judges appointed between December 24, 2013 and June 30, 2014

³⁵ Eliminated for judges appointed after December 23, 2014

	ERS		TRS		JRS	
	Hired Jan 1, 2000 or later ³⁶	Hired before Jan 1, 2000 ¹¹	Hired Aug 1, 2014 or later	Hired before Aug 1, 2014	Hired July 1, 2014 or later	Hired before July 1, 2014
Ancillary benefits	Act 127 enhanced salary-based death and disability benefits for high risk members. Otherwise return of contributions with interest	Act 127 as described above. Others receive return of accumulated contributions with interest plus any accrued benefits under Act 1 or Act 447.	None beyond return of contributions with interest	Disability benefit based upon service and salary at time of disability; return of accumulated contributions with interest upon death	Disability benefit-based benefit upon service and salary at time of disability; return of accumulated contributions with interest upon death	Death and disability benefits based upon service and salary at time of death and disability

More detailed provisions related to the Retirement Systems are in the sections that follow.

Employees Retirement System (ERS)

ERS currently has three basic groups of employees:

	Act 447 members	Act 1 members	System 2000
Hire date	Prior to April 1990	From April 1, 1990 through 1999	On or after January 1, 2000 ³⁷
Benefit formula	1.5% of pre-2013 three-year average compensation per year of pre-2013 service	1.5% of pre-2013 five-year average compensation per year of pre-2013 service	Notional accounts are tracked based on actual member contributions made through payroll deductions. The accounts are credited with notional earnings, and then upon retirement are converted to life annuities based on actuarial tables.
Retirement eligibility prior to 2013 freeze	58 with 10 years of service, or any age with 30 years of service Enhanced benefit if retiring with 30 years of service <ul style="list-style-type: none"> ▶ 65% of average pay if under 55 ▶ 75% of average pay if over 55 	At age 55 with 25 years of service, or at age 65 with 10 years of service, or	Age 55 for Public Officers in High Risk Positions and attainment of age 60 otherwise

³⁶ Different provisions may apply to Mayors or individuals in high risk positions

³⁷ System 2000 members and those hired after June 2013 are Act 3 members, but their benefit provisions are similar to System 2000 provisions and references to System 2000 members are generally inclusive of this group.

	Act 447 members	Act 1 members	System 2000
Additional plan features	<ul style="list-style-type: none"> ▶ Ability to elect plan which is coordinated with Social Security ▶ Benefits based on average compensation for three years rather than five ▶ Retirement eligibility at age 50 with 25 years of service if in High Risk Positions 	<ul style="list-style-type: none"> ▶ Certain enhanced benefits are available for Mayors, Police, and Firefighters. ▶ Prior to 2013, these members were eligible to retire as follows: <ul style="list-style-type: none"> ▶ At any age with 30 years of service if a Public Officer in High Risk Position, or ▶ At age 50 with eight years of service if a Mayor. 	If their balances are less than \$10,000, they are paid a lump sum rather than an annuity.
Retirement eligibility after 2013 freeze	Delayed as much as 3 years	Delayed as much as 3 years. Age 50 and mayor provisions eliminated	Delayed as much as 5 years.

Act 3-2013 ceased accruals of defined benefits for Act 1 and Act 447 members. From that point forward, those members also had notional account balances - like System 2000 - based solely on their own contributions. Prior to Act 3-2013, members could select from more than one option of hypothetical investment options to determine the earnings on their hybrid account balances. After Act 3-2013, interest for all ERS hybrid account balances was changed to be based on 80% of the rate of return on the overall ERS pension trust.

ERS, like many other public pension plans, also provides ancillary benefits, including:

- ▶ Disability benefits
- ▶ Death benefits
- ▶ Termination benefits

In addition, ERS also administers many "Special Law Benefits" for retirees, survivors and disabled members. These include:

- ▶ Christmas Bonus of \$200 annually
- ▶ Medication Bonus of \$100 each July
- ▶ Medical Insurance Plan Contribution of \$100 per month for those electing coverage
- ▶ Cost-of-Living-Adjustments paid periodically through 2007
- ▶ Minimum benefits
- ▶ High Risk Disability benefits

These Special Law Benefits were structured to be paid in part by the systems and in part by the members' employer. The employer portion was also paid through the trust of each respective plan and were referred to as "System Administered Benefits". These System Administered Benefits were to be paid by the General Fund for former government employees or by the public corporation of municipality for their former employees. Act 3-2013 also eliminated most of the Special Law benefits for those retiring after June 2013.

The selected list of ERS Special Laws passed since 1958, and amended by Act 3-2013 include:

COLA

Act No. 10-1992
Act No. 207-1995
Act No. 134-1996
Act No. 221-1998
Act No. 40-2001
Act No. 157-2003
Act No. 35-2007

Christmas Bonus

Act No. 98-1980,
as amended

Widows

Act No. 105-1969,
as amended

Medical Plan

Act No. 95-1963,
as amended

Others

Act No. 127-1958 - Benefits for high-risk participants
Act No. 37-2001 - Summer bonus
Act No. 524-2004 - \$250 increase in death benefits
Act No. 3-2013 - \$500 minimum pension increase
Act No. 155-2003- Medication Bonus

Contributions for ERS were made by both the members and the employers. Member contributions in most cases are 10% of compensation and subject to revision. Employer contributions were not actuarially determined but were statutorily based on compensation. Effective July 1, 2016, the employer contribution rate was 15.525% of pay, and was scheduled to increase by 1.25% of pay per year, ultimately reaching 20.525% of pay by July 2020.

Teacher Retirement System (TRS)

TRS currently has two basic groups of employees and two groups of pensioners:

1. Those hired prior to August 2014 earn benefits under a defined benefit formula.

These members earned this defined benefit based on their service. The defined benefit is payable as a life annuity, with a basic benefit equal to 1.8% of their three-year average compensation per year of service. However, many exceptions apply to the 1.8% formula, as indicated by the following table:

Attained Age	Years of Service	Benefit as percentage of average compensation
50	at least 30	75%
Under 50	at least 30	65%
50	less than 30	1.8% per year of service
47 but less than 50	less than 30	95% of 1.8% per year of service

2. Those hired after July 2014 earn benefits under notional accounts, like System 2000 based on Act 160-2013.

Benefits for these members receive no traditional defined benefit pensions are based solely on their own contributions made through payroll deduction. The accounts are credited with earnings, and then upon retirement are converted to life annuities based on actuarial tables. If their balances were less than \$10,000, they are paid a lump sum rather than an annuity.

Act 160-2013 also eliminated special law benefits for future retirees and increased the employer contribution requirements. Teachers hired prior to August 2014 continue to accrue benefits under the defined benefit plan.

TRS, like ERS and many other public pension plans, also provides ancillary benefits, including:

- ▶ Disability benefits
- ▶ Death benefits
- ▶ Termination benefits

Like ERS, TRS also administers many "Special Law Benefits" for retirees, survivors and disabled members which were reduced or eliminated in 2013. These include:

- ▶ Christmas Bonus of \$200 annually
- ▶ Medication Bonus of \$100 each July
- ▶ Medical Insurance Plan Contribution of \$100 per month for those electing coverage
- ▶ Cost-of-Living-Adjustments paid periodically through 2007
- ▶ Minimum benefits

As with ERS, these Special Law Benefits were generally structured to be paid in part by the systems and in part by the members' employer. The employer portion was also paid through the trust of each respective plan and were referred to as "System Administered Benefits". These System Administered Benefits were to be paid by the General Fund for former government employees or by the public corporation of municipality for their former employees.

Contributions for TRS were made by both the members and the employers. Member contributions for the defined benefit plan are 9% of compensation. Member contributions under the hybrid plan were scheduled to increase, from 10.00% of pay through June 2017 to 13.12% of pay for the period July 2017 through June 2020, increasing to 14.02% of pay effective July 2020. Note that TRS contributions are higher than ERS contributions. This is because of the richer benefits due to TRS members not participating in Social Security. Like other plans, employer contributions were not actuarially determined, but defined statutorily based on compensation. Effective July 1, 2016, the employer contribution rate was 14.75% of pay, and was scheduled to increase by 1.25% of pay per year, ultimately reaching 20.525% of pay by July 2020. However, as noted earlier, Act 106 implemented the PayGo approach, resulting in the employers no longer contributing to the funds, but paying the cost of benefits attributable to their retirees.

The list of the most significant TRS Special Laws passed since 1963, and amended by Act 160-2013 are:

Act No.49-1980 as amended- Christmas Bonus
Act No. 162-2003, as amended- Medication Bonus
Act No. 38-2001, as amended- Summer Bonus
Act No. 95-1963, as amended- Medical Insurance Plan Contribution
Act No. 62-1992, as amended- Cost-of-Living-Adjustments
Act No. 160-2013- \$500 minimum pension increase

The list of the most significant JRS Special Laws passed since 1969, and amended by Act 162-2013 are:

Act No.98-1980 as amended- Christmas Bonus
Act No. 155-2003, as amended- Medication Bonus
Act No. 37-2001, as amended- Summer Bonus
Act No. 10-1992, as amended- Cost-of-Living-Adjustments
Act No. 105-1969, as amended- Widow benefits

Judiciary Retirement System (JRS)

JRS currently has three basic groups of employees:

Hire date	Prior to December 24, 2013	Between December 24, 2013 and June 30, 2014	After June 30, 2014
Benefit formula	25%, plus 5% for each year of service in excess of ten years, with a maximum of 75% of pay	25%, plus 5% for each year of service in excess of ten years, with a maximum of 60% of pay	1.50% of five-year average compensation per year of service, plus annuity based on notional accounts.
Retirement eligibility	Age 60 with at least 10 years of service	Age 60 with at least 10 years of service	Age of 65 with 12 years of service
Additional plan features	Enhanced benefits are provided for judges appointed before June 29, 2007 to an unlimited term ► Optional retirement provisions apply after age 55 but prior to age 60 for those with 20 years of service whose age plus years of service add to 82		Notional account balances are payable as annuities upon retirement calculated based on actuarial tables.
Retirement eligibility after 2013 freeze	Delayed as much as 3 years	Delayed as much as 3 years. Age 50 and mayor provisions eliminated	Delayed as much as 5 years.
Employee contributions	8% of pay	10% of pay	12% of pay

Act 162-2013 also eliminated Special Law benefits for future retirees and strengthened the employer contribution requirements. In addition, Act 160-2013 also included components which reduced benefits for those previously employed, which the Supreme Court ruled against in 2014. This created a third group for those appointed between December 24, 2013, and June 30, 2014. This group received the same benefits as those hired prior, but with a 60% of pay maximum benefit rather than 75% of pay.

JRS, like ERS, TRS and many other public pension plans, also provides ancillary benefits, including:

- Disability benefits
- Death benefits
- Termination benefits

Like TRS and ERS, JRS also administers many “Special Law Benefits” for retirees, survivors and disabled members who were hired prior to December 24, 2013. These include:

- Christmas Bonus of \$600 annually
- Summer Bonus of \$100 annually
- Medication Bonus of \$100 each July
- Medical Insurance Plan Contribution of \$100 per month for those electing coverage
- Cost-of-Living-Adjustments paid periodically, including for those hired after June 2014
- Minimum benefits

As with TRS and ERS, these Special Law Benefits were structured to be paid in part by the systems and in part by the members' employer. The employer portion was also paid through the trust of each respective plan and were referred to as “System Administered Benefits”. These System Administered Benefits were to be paid by the General Fund for former government employees or by the public corporation of municipality for their former employees.

Effective July 1, 2008, the employer contribution rate was 30.34% of compensation. However, as noted earlier, Act 106 implemented the PayGo funding approach, resulting in the employers no longer contributing to the funds, but paying the cost of benefits attributable to their retirees.

Appendix C: Public Pension Coordinating Council Public Pension Standards

The Public Pension Coordinating Council (“PPCC”) established Public Pension Standards (the “Standards”) to reflect minimum expectations for public retirement system management, administration, and funding. The Standards serve as a benchmark by which to measure public defined benefit plans.

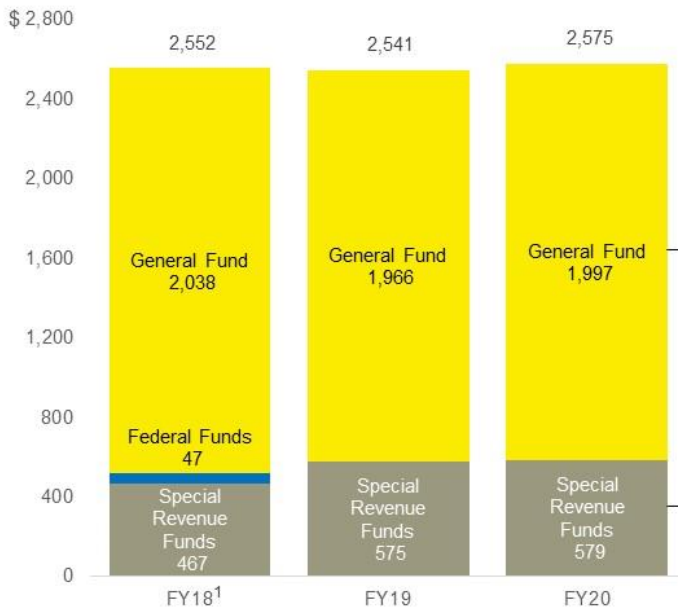
All public retirement systems and the state and local governments that sponsor them are encouraged by the PPCC to meet the Standards.

The standards include five areas of assessment. Those areas are:

1. **Comprehensive Benefit Program.** The system must provide a comprehensive benefit program including service retirement benefits, in-service death benefits, disability benefits, vesting, and provisions for granting a cost-of-living adjustment.
2. **Actuarial.** An Actuarial Valuation must be completed at least every two years using generally recognized and accepted actuarial principles and practices.
3. **Audit.** The system must obtain an unqualified opinion from an independent audit conducted in accordance with government auditing standards generally accepted in the United States.
4. **Investments.** The system must follow written investment policies and written fiduciary standards and the system must obtain an annual investment performance evaluation from an outside investment review entity.
5. **Communications.** Members must be provided a handbook or summary plan description, regular updates to the documents, and an annual benefit statement. Meetings of the governing board of the system are conducted at least quarterly with adequate public notice.

Appendix D: Breakdown of Annual Budgeted PayGo Cost

FY20 consolidated budget PayGo components \$ in millions



Note: Due to rounding, numbers presented may not add up precisely to the totals provided.

1. FY18 pension costs include some employer contributions for pension payments.

2. Includes \$345m in Special Revenue Fund (SRF) PayGo fees to the Employee Retirement System (ERS), consistent with the certified Fiscal Plan, dated May 9, 2019. The Commonwealth processes ERS pension payments on behalf of municipalities and certain instrumentalities outside of the Commonwealth. It is expected that all municipalities and other contributing instrumentalities outside of the Commonwealth will pay their PayGo obligation to Hacienda in the FY20 budget for processing by the Commonwealth.

3. Includes 33 additional agencies including Ports, HFA, ACAA, PRIDCO, among others.

4. Includes Municipal Revenue Collection Center (CRIM), Corp. for the Supervision and Insurance of Cooperatives of PR (Cossec), Metropistas, among others.

Source: FY20 certified budget

General Fund PayGo allocations

Department of Education (Incl. TRS & ERS)	\$1,062
Custody of Hacienda	197
Puerto Rico Police Department	194
Department of Health	74
Department of Hacienda	47
Department of Corrections	36
Department of Justice	30
Department of Labor and Human Resources	25
Other Agencies	<u>332</u>
Total General Fund	\$1,997

SRF PayGo allocations

State Insurance Fund Corporation	\$96
Ports Authority	25
Other Agencies and other instrumentalities ^{2,3}	<u>113</u>
Total SRF (within CW Fiscal Plan)	\$234
Municipalities	192
PRASA	96
HTA	36
Other public corporations outside the Fiscal Plan ⁴	<u>21</u>
Total SRF (outside of CW Fiscal Plan)	\$345
Total SRF PayGo	\$579

Appendix E: Distribution of System Benefits by Age and Amount

Employees Retirement System as of July 1, 2016³⁸

Age / Monthly Benefit (\$)	0 - 500	500 - 1,000	1000 - 1,100	1,100 - 1,135	1,135 - 1,315	1,315 - 1,500	1,500 +	Total pensioners
<50	2,727	455	21	14	23	31	42	3,313
50-55	1,542	687	64	31	166	147	661	3,298
55-60	1,146	1,710	309	142	699	867	4,679	9,552
60-65	1,473	5,453	600	232	1,206	1,717	7,926	18,607
65-70	2,174	11,777	1,033	417	2,089	1,620	6,066	25,176
70-75	1,768	13,467	925	396	1,304	1,098	3,176	22,134
75-80	2,412	11,104	616	236	722	532	1,559	17,181
80-85	1,934	8,283	401	135	377	294	716	12,140
85-90	1,476	4,917	171	44	168	89	260	7,125
90-95	814	2,202	52	15	58	37	91	3,269
95-100	224	551	7	6	13	5	14	820
>100	50	83	2		2	2	3	142
Total # ppts	17,740	60,689	4,201	1,668	6,827	6,439	25,193	122,757
% of Total	14%	49%	3%	1%	6%	5%	21%	

³⁸ Includes information for fiscal plan and non-fiscal plan entities. Based on information provided by the plan actuary used for valuation purposes. Average benefit amounts exclude any Special Law bonuses.

Teachers Retirement System as of July 1, 2016³⁹

Age / Monthly Benefit (\$)	0 - 500	500 - 1,000	1000 - 1,100	1,100 - 1,135	1,135 - 1,315	1,315 - 1,500	1,500 +	Total pensioners
<50	163	133	21	6	38	7	9	377
50-55	87	133	52	13	249	103	700	1,337
55-60	157	218	74	29	303	230	4,249	5,260
60-65	337	707	202	75	454	263	7,250	9,288
65-70	465	805	199	87	692	2,579	3,837	8,664
70-75	528	1,006	313	96	746	1,845	1,482	6,016
75-80	721	1,420	369	156	737	705	518	4,626
80-85	805	1,508	554	115	386	259	171	3,798
85-90	674	1,194	222	44	169	70	46	2,419
90-95	356	634	82	18	51	21	19	1,181
95-100	103	130	19	4	15	4	2	277
>100	27	26	4	0	2	1	2	62
Total # ppts	4,423	7,914	2,111	643	3,842	6,087	18,285	43,305
% of Total	10%	18%	5%	1%	9%	14%	42%	

³⁹ Based on information provided by the plan actuary used for valuation purposes. Average benefit amounts exclude any Special Law bonuses.

Judiciary Retirement System as of July 1, 2015⁴⁰

Age / Monthly Benefit (\$)	0 - 500	500 - 1,000	1000 - 1,100	1,100 - 1,135	1,135 - 1,315	1,315 - 1,500	1,500 +	Total pensioners
<50							3	3
50-55							1	1
55-60			1				14	15
60-65		1		1		1	57	60
65-70		2			1		81	84
70-75		1	1	1	1		68	72
75-80	1	3			2	3	64	73
80-85	1	3			2	2	49	57
85-90		1	1		1	2	21	26
90-95	1	1	1		1	2	9	15
95-100							2	2
>100		1					1	2
Total # ppts	3	13	4	2	8	10	370	410
% of Total	1%	3%	1%	0%	2%	2%	90%	

⁴⁰ Based on information provided by the plan actuary used for valuation purposes. Average benefit amounts exclude any Special Law bonuses.

Appendix F: Act 3 and Act 106 Analysis Assumptions

Act 447 Demographic Assumptions and Law Impacts

Hire Date	Prior to April 1990
No. of Members	~19,000 members
Average Profile When Act 3-2013 Was Enacted	54 years old, 27 years of service with an average salary of \$33,106
Impact of Act 3-2013	<ul style="list-style-type: none"> ▶ Accrued benefits were frozen and the member transitioned to a hybrid account, which is promised to be paid at retirement via a lifetime annuity ▶ The survivorship benefit was eliminated, putting spouses and families at risk when the retiree dies ▶ The disability pension was eliminated ▶ The retirement age increased to 59, 60 or 61 based on age as of June 30, 2013 ▶ The merit pension, where a percentage of annual salary in the pension benefit accrual formula increases to a maximum of 75% upon reaching 30 years of service and 55 years of age, was eliminated ▶ Certain bonuses and medical contributions were eliminated
Impact of Act 106-207	<ul style="list-style-type: none"> ▶ The hybrid accounts were frozen as of June 30, 2017 and members transitioned to the defined contribution plan

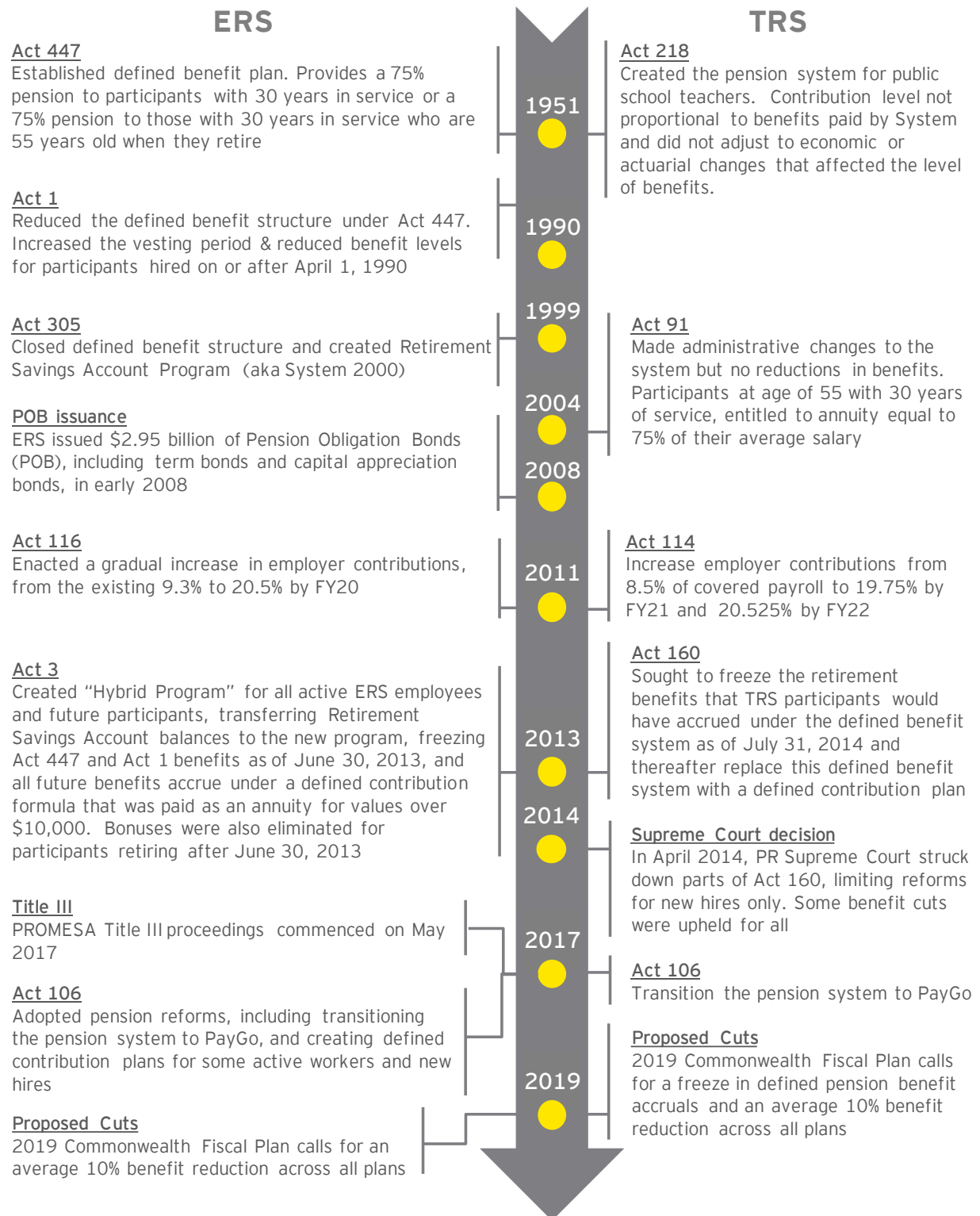
Act 1 Demographic Assumptions and Law Impacts

	Act 1 Members
Hire Date	April 1990 to December 1999
No. of Members	~43,000 members
Average Profile When Act 3-2013 Was Enacted	49 years old, 19 years of service with an average salary of \$29,871
Impact of Act 3-2013	<ul style="list-style-type: none"> ▶ Accrued benefits were frozen and members transitioned to a hybrid account, which is paid at retirement via a lifetime annuity ▶ Survivorship benefit and disability pension was eliminated ▶ The retirement age remained at 65, but the early retirement option was eliminated ▶ Certain bonuses and medical contributions were eliminated
Impact of Act 106-207	<ul style="list-style-type: none"> ▶ The hybrid accounts were frozen as of June 30, 2017 and members transitioned to the defined contribution plan

System 2000 Demographic Assumptions and Law Impacts

	System 2000 Members
Hire Date	After January 2000
No. of Members	~64,000 members
Average Profile When Act 3-2013 Was Enacted	42 years old, 8 years of service with an average salary of \$24,719
Impact of Act 3-2013	<ul style="list-style-type: none"> ▶ The retirement age increased from 60 to age 61 to 65, depending on the member's age as of June 30, 2013 ▶ Certain bonuses and medical contributions were eliminated
Impact of Act 106-207	<ul style="list-style-type: none"> ▶ The hybrid accounts were frozen as of June 30, 2017 and members transitioned to the defined contribution plan

Appendix G: Timeline of ERS and TRS Legislative Events



Appendix H: ERS Employers

Employers in Fiscal Plan					
ERS	Govt	Employer	ERS	Govt	Employer
220	25	Puerto Rico Housing Bank and Finance Agency	167	25	Social Services Department
226	25	Credit Corporation for Agricultural Commercial Development	168	78	Department of Housing
433	152	Office of the Administration of the Procedures	169	43	Puerto Rico National Guard
101	100	Puerto Rico Senate	170	81	Department of Education (Teacher)
102	100	Joint Commission on Special Reports of the Comptroller	171	81	Department of Education (Not Teacher)
103	100	Puerto Rico House of Representatives	172	277	Rural Development Corporation of Puerto Rico
104	100	Senatorial District Review Board	173	87	Department of Recreation and Sports
105	25	Permanent Commission on Retirement Systems	174	87	P.R. National Park Company
107	25	Adm. Development and Improved Housing	175	89	Horse Racing Industry and Sport Administration
108	100	Joint Legislative Activities	176	67	Puerto Rico Department of Labor and Human Resources
109	16	Office of Management and Budget	178	25	Puerto Rico Varieties Commission
110	25	Adm. Patient Compensation Fund	179	25	Commission for the Study of Labor
112	29	Puerto Rico Federal Affairs Administration	180	25	Family Protection and Fort Commission
113	25	Commission To Combat Crime	188	25	Economic Development Administration
114	8	Office of the Comptroller	194	75	Commissioner of Financial Institutions
115	90	Medical Services Administration of Puerto Rico	196	82	Institute of Puerto Rican Culture
116	25	Teacher Retirement System	198	25	Office for child service and community development
117	25	Teacher Retirement System - Pensioned	199	277	Agricultural Enterprises Development Administration (ADEA)
118	95	Mental Health and Drug Addiction Services Administration	202	141	Communications Corporation
119	96	Office of the Women's Advocate	203	162	Public Building Authority (PBA)
120	137	Correction Administration	205	285	Puerto Rico Integrated Transit Authority (Metropolitan Bus)
122	10	The General Court of Justice	206	168	Puerto Rico Ports Authority
123	11	Puerto Rico Traffic Safety Commission	207	165	Land Authority
124	137	Youth Affairs Office	209	25	Authority of Shipping Companies of Puerto Rico
125	25	Puerto Rico Energy Office	210	184	Solid Waste Authority
126	14	Puerto Rico Environmental Quality Board	211	177	Land Authority of Puerto Rico
127	15	Office of the Governor	212	192	Fine Arts Center Corporation
129	273	Administration Regulations and Permits	213	67	Administration of the Right to Work
130	18	Puerto Rico Planning Board	214	79	Automobile Accidents Compensation Administration
131	119	Board of Appeals on Construction and Lotifications	216	25	Adm. Communal Services
132	21	Bureau of Emergency and Disaster Management	217	191	Musical Arts Corporation
133	22	Office of the Commissioner of Insurance	218	287	Employees Association of the Commonwealth
134	23	Puerto Rico Department of State	219	172	Government Development Bank
135	24	Puerto Rico Department of the Treasury	221	258	Trade & Export Company
136	25	Commission to Ventilate Municipal Complaints	224	180	Puerto Rico Tourism Company
137	279	Public Service Appeals Commission	225	25	Urban Renovation and Housing Corporation
138	30	Office Labor Advisory Center	227	188	Cardiovascular Center Corp. of Puerto Rico and the Caribbean
139	28	State Elections Commission	229	25	Puerto Rico Sugar Corporation
140	928	Rtmt System for Employees of Govt and Judiciary Rtmt System	230	25	Marine Resources Development Corporation
141	25	Pensioned Central Withdrawal	231	25	Mineral Resources Development Corporation
142	31	General Services Administration	232	25	Negotiated Employment Security
143	67	Administration for the Training of Future Employers & Workers	234	25	New Corporation Center of San Juan
144	34	Commission of Investigation, Processing and Appeals	235	186	Culebra Conservation and Development Authority
145	35	Office of Industrial Tax Exemption	236	25	Agricultural Extension Service
146	16	Office Commissioner Municipal Affairs	237	119	Dep. of Economic Dvlp. and Commerce of Puerto Rico
147	37	Civil Rights Commission	238	25	Trust for the Development of National Parks
148	38	Puerto Rico Department of Justice	239	25	Gen. Special Study Center Government
149	40	Puerto Rico Police Department	240	25	Board of Education and Employment
150	42	Fire Bureau of Puerto Rico	242	193	Government Ethics Board
151	60	Office of the Citizen's Ombudsman	243	189	Bureau of Forensic Sciences Institute
152	49	Puerto Rico Department of Transportation and Public Works	244	25	PR Occupational Inform. Coordinating Committee (PROICC)
153	50	Puerto Rico Department of Natural & Environmental Resources	245	195	Economic Development Bank of Puerto Rico
154	55	Puerto Rico Department of Agriculture	246	137	Administration for Youth Institutions
155	25	Commercial Development Administration	247	105	Puerto Rico Industrial Development Company
158	25	Cooperative Development Administration	248	137	Corporation of Training and Labor Companies
159	25	Puerto Rico Sugar Board	249	196	Puerto Rico Public Broadcasting Corporation
160	65	Public Service Commission	252	139	Parole Board
161	68	Puerto Rico Labor Relations Board	253	25	Adm. of Labor Development
162	69	Puerto Rico Department of Consumer Affairs	255	100	Special Reports Commission
163	70	State Insurance Fund Corporation	257	25	Department of Affairs of the Puerto Rican Community
164	71	Department of Health	259	153	Office for People With Disabilities
165	25	Adm. Health Services Facilities	260	152	Elderly and Retired People Advocate Office
166	25	Cooperative Inspector Office	261	25	Coord Ofc for Assist. & Services to Res. Project Citizens (OCASCIR)

Employers in Fiscal Plan (Cont'd)					
ERS	Govt	Employer	ERS	Govt	Employer
262	155	State Historic Preservation Office of Puerto Rico	411	137	Office of Services Before Trial
264	100	Office of Legislative Services	413	25	Cinema Development Corporation
265	100	Superintendent of the Capitol	415	25	Administration for the Rehabilitation of Communities
266	106	Public Housing Administration	416	25	Perm Commission Withdrawal Systems
267	25	Permanent Housing Office	417	220	Correctional Health Services Corporation
268	120	Veteran's Advocate Office	418	100	Joint Special Commission on Legislative Donations
269	141	Telecommunications Regulatory Board	419	279	Committee on Labor Relations and Public Service
270	198	Agricultural Insurance Corporation	422	231	Office for the Patient's Advocate
271	138	Institutional Trust of the National Guard of Puerto Rico	423	221	Emergency Medical Corps Bureau
272	109	Puerto Rico School of Plastic Arts	426	25	University of Criminal Justice of Puerto Rico
273	25	Strategic Development Council of Puerto Rico	427	241	Administration for Integral Development of Childhood
275	23	P.R. General Education Council	428	273	Permits Management Office
292	187	Puerto Rico Health Insurance Administration	429	273	Office Inspector General of Permits
293	23	P.R. Education Council	431	34	Public Service Appeal Commission
295	215	Puerto Rico Conservatory of Music Corporation	432	272	Office of Inspector General of Puerto Rico
296	121	Government Board of the 911 Service	436	290	State Office of Energy Policy
297	11	Security and Protection Commission	437	153	Advocate for People With Disabilities
298	176	University of Puerto Rico (UPR)	438	329	Office of Socio-Economic and Community Development
401	37	Commission On Citizens' Rights	439	30	PR Office of Human Resources Mngt and Transformation
404	137	Department of Correction and Rehabilitation	500	238	The Port of the Americas Authority
406	122	Puerto Rico Department of the Family	502	285	Puerto Rico Integrated Transit Authority (Maritime)
407	123	Family and Children Administration	507	289	Energy Commission
408	124	Child Support Administration (ASUME)	508	290	Administration of Energy Affairs
409	126	Vocational Rehabilitation Administration	511	235	Puerto Rico Housing Finance Corporation
410	127	Administration for Socioeconomic Development of the Family	512	161	Puerto Rico Infrastructure Financing Authority
			888	25	Central Government Agencies - Remittances

Municipality Employers								
ERS	Govt	Employer	ERS	Govt	Employer	ERS	Govt	Employer
301	208	Adjuntas	326	208	Fajardo	351	208	Naguabo
302	208	Aguada	377	208	Florida	352	208	Naranjito
303	208	Aguadilla	327	208	Guanica	353	208	Orocovis
304	208	Aguas Buenas	328	208	Guayama	354	208	Patillas
305	208	Aibonito	329	208	Guayanilla	355	208	Peñuelas
306	208	Añasco	330	208	Guaynabo	356	208	Ponce
307	208	Arecibo	331	208	Gurabo	357	208	Quebradillas
308	208	Arroyo	332	208	Hatillo	358	208	Rincon
309	208	Barceloneta	333	208	Hormigueros	359	208	Rio Grande
310	208	Barranquitas	334	208	Humacao	360	208	Sabana Grande
311	208	Bayamon	335	208	Isabela	361	208	Salinas
312	208	Cabo Rojo	336	208	Jayuya	362	208	San German
313	208	Caguas	337	208	Juana Diaz	363	208	San Juan
314	208	Camuy	338	208	Juncos	364	208	San Lorenzo
378	208	Canovanas	339	208	Lajas	365	208	San Sebastian
315	208	Carolina	340	208	Lares	366	208	Santa Isabel
316	208	Cataño	341	208	Las Marias	367	208	Toa Alta
317	208	Cayey	342	208	Las Piedras	368	208	Toa Baja
318	208	Ceiba	343	208	Loiza	369	208	Trujillo Alto
319	208	Ciales	344	208	Luquillo	370	208	Utua
320	208	Cidra	345	208	Manati	371	208	Vega Alta
321	208	Coamo	346	208	Maricao	372	208	Vega Baja
322	208	Comerio	347	208	Maunabo	373	208	Vieques
323	208	Corozal	348	208	Mayaguez	374	208	Villalba
324	208	Culebra	349	208	Moca	375	208	Yabucoa
325	208	Dorado	350	208	Morovis	376	208	Yauco

ERS Employers outside of Fiscal Plan								
ERS	Govt	Employer	ERS	Govt	Employer	ERS	Govt	Employer
279	25	CRIM	208	66	HTA	506	N/A	Metropistas
228	212	COSSEC	379	25	Ponce Muelle			
201	163	PRASA	218	N/A	AEELA			

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